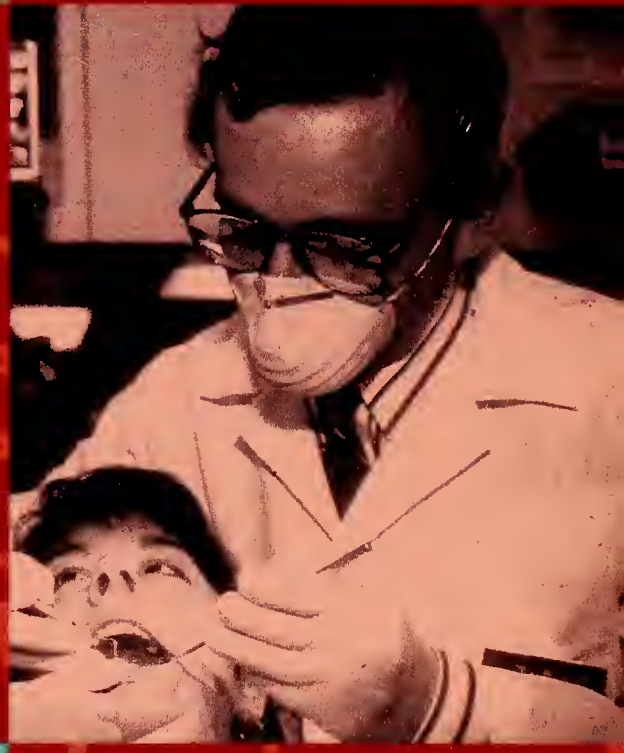
HARVARD

School of Dental Medicine

Official
Register

EDUCATION

PRACTICE



TRADITION

RESEARCH

Harvard School of Dental Medicine
Official Register

In accordance with Harvard University policy, the School of Dental Medicine does not discriminate against any person on the basis of race, color, sex, sexual orientation, religion, age, national or ethnic origin, political beliefs, veteran status, or handicap in admission to, access to, treatment in, or employment in its programs and activities.

The information contained in the Harvard School of Dental Medicine Official Register is applicable to the academic year 1992-1993. Every effort has been made to ensure that this information is accurate at the time of publication; however, the School reserves the right to make corrections and changes without notice to courses of instruction, programs, degree requirements, tuition and fees, and any other information in accordance with established academic procedures.

The Harvard School of Dental Medicine is accredited by the Commission on Dental Accreditation of the American Dental Association.

Official Register of Harvard University

Harvard School of Dental Medicine

188 Longwood Avenue

Boston, Massachusetts 02115

Telephone: 617 432 1443

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Message from the Dean

Dean R. Bruce Donoff

The Harvard School of Dental Medicine was established in 1867 as the first university-based dental school in the United States. This relationship with a great university and its associated world-renowned medical center and teaching hospitals shapes the education of dental students. The Harvard School of Dental Medicine has achieved success in its mission of producing leaders in the field of dental medicine in clinical care, teaching and research by being educationally innovative, and by providing a professional school education that presents multiple opportunities for enrichment. Dental school education often takes highly qualified applicants and puts them through an ever narrowing funnel of educational experience to produce a dentist indistinguishable from others. The education of a Harvard dental student prepares women and men for a career of lifelong learning whether that be in clinical practice, teaching, research or oral health care delivery.

The real strengths of the School are our students and faculty. In an environment of excellence, shared with medical school classmates during the early years of education, dental students gain an appreciation of the human mind, body and spirit that gets at the heart of patient care, their main reason for being students of dentistry. Our philosophy is that dentistry is a specialty of medicine and therefore a certain body of knowledge must be part of every doctor's information repository. Students learn to learn in the tutorial style of education that is emphasized in the New Pathway curriculum. This type of learning is fostered as, at the end of their second year, students enter the clinical phases of their education in the dental school.

The clinical phases of dental education are provided with the same degree of individualized instruction, attention to understanding and respect for the difficulty of learning. The third year of dental education in the school clinics provides the basics of all phases of dentistry. This is followed by rotations in our affiliated institutions allowing students to gain experience and confidence in providing dental care in varying settings to patients with differing needs and levels of general health.

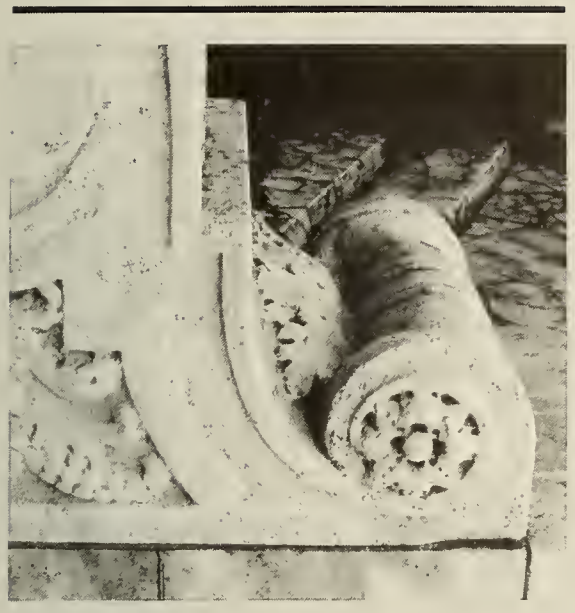
The diversity of the curriculum is seen with a significant research effort during the fourth and fifth years, as well as multiple elective opportunities in basic medical areas, international activities and advanced clinical experiences. Opportunities to enter specialty areas early, combined degree programs, and advanced degree programs exist to further enrich the possibilities for a unique dental educational experience for all students.

Our predoctoral and postdoctoral programs call upon the wealth of teaching and learning experiences that exist within the dental school, the medical school, the affiliated teaching hospitals and the entire University. The School believes that the profession needs broadly educated dentists who are outstanding clinicians, are prepared to develop and teach the new biomedical and biotechnical knowledge needed in dentistry, can interact effectively with colleagues in the health care professions in hospitals and other health care delivery systems, and can represent dentistry in health care policy debates and decisions.

The descriptions of our programs that follow give the details of how we provide the framework for this type of dental education. As a graduate of the Harvard School of Dental Medicine, I can honestly say that this experience provided opportunities that I never dreamed existed in a dental school education and shaped my life. Emphasis of scholarship, with a tradition of excellence, makes a difference.

R. Bruce Donoff

Harvard University and the Medical Area Schools



Harvard College opened its doors in Cambridge, Massachusetts in 1636 with an enrollment of 12 students and one Master to teach all subjects. Its mission was to educate the religious and intellectual leaders of the newly settled New England colonies. Expanding its size and extending its geographical boundaries during the 19th century, the College added graduate and professional schools which now number ten. Four of these are located in the city of Boston: the Business School, the School of Dental Medicine, the Medical School, and the School of Public Health. The latter three form the nucleus of the Harvard Medical Area which also includes some of the world's finest affiliated teaching and research hospitals.

Today Harvard is one of the world's outstanding universities with a total graduate and undergraduate enrollment of approximately 17,000 degree candidates. Its mission, however, has remained essentially the same though considerably broadened in scope: that is, to educate the leaders of our complex, international society.

Harvard University, with its beautiful Georgian architecture and deeply rooted academic traditions, has maintained a strong link with its New England past. But the makeup of its student population has broadened from one dominated by the Northeast to one attracting a wide representation from throughout the United States and from over 100 countries. Within its ranks can be found some of the world's most gifted students and productive scholars. Harvard constantly strives to provide an educational environment in which students and faculty alike can grow and work and dream.

Harvard Medical Area Schools

The Medical Area includes the School of Dental Medicine, the Medical School, and the School of Public Health, as well as affiliated hospitals and research centers.

Harvard School of Dental Medicine

The first university-based dental school in the country, Harvard Dental School, was founded in 1867. It was also the first to be set up in close affiliation with a medical school (Harvard Medical School) and to make the full scholarly and scientific resources of a university available to dental education.

Earlier attempts in Maryland and elsewhere to establish chairs of dentistry within existing medical schools had failed, causing dentistry to set up a separate system of education. In this case, the newly formed Massachusetts Dental Society approached Harvard with a proposal for a school, and in March, 1867, a special committee appointed by Harvard Medical School recommended action, stating:

> Dentistry has become with the past quarter of a century a most important art, a knowledge of which supposes not only mechanical skill, but a thorough acquaintance with the processes of dentition, physiologically and pathologically considered. Hence arises the necessity for a knowledge of the general principles of anatomy, physiology, surgery, chemistry, and materia medica, to which should be added some knowledge of the theory and the practice of medicine. A medical school already established is therefore the best place at which these various studies can be attended to.

The School was founded near the Massachusetts General Hospital in Boston, with operative dentistry being performed in the outpatient department. Dr. Nathan Cooley Keep, who as first president of the Massachusetts Dental Society had originally proposed the School, was named Dean. Oliver Wendell Holmes, Parkman Professor of Anatomy and Physiology, was a member of the original faculty and held students spellbound by his erudition and wit.

The first graduating class in 1869 - which attended for two academic years of four months each - numbered six men. One of these was Robert Tanner Freeman, the first black in the United States to receive a dental degree. In 1878 George F. Grant, a member of the second graduating class, became the first black to serve on the Harvard faculty, teaching at the Dental School and maintaining a dental practice on Charles Street in Boston, with Harvard's President Charles W. Eliot among his patients.

In 1909 the School moved to its present location in the Longwood Avenue area of Boston. Teaching affiliations were formed with Children's Hospital, Boston City Hospital, Peter Bent Brigham Hospital, and subsequently with numerous other health centers.

From its founding, Harvard Dental School has led many times in setting standards of scholarship for dental education. Its faculty members have also pioneered the development of new standards of clinical care, as during World War I, when Harvard dentists serving in France under Dr. Varaztad Kazanjian '05, brought a new era of oral and plastic surgery to the treatment of facial wounds.

In 1940, under President James B. Conant, the School was reorganized as Harvard School of Dental Medicine to place stronger emphasis on the biological basis of oral medicine and to institute multidisciplinary programs of dental research. A unique feature of the current predoctoral curriculum places dental students in joint classes with medical students for two years of basic science, and for an introduction to clinical medicine on the wards of Harvard teaching hospitals. President Conant's plan to offer the M.D. degree also continues as an option linked with advanced training in the various dental specialties.

In 1957, the School of Dental Medicine was awarded National Institute of Dental Research training grant funding and began to expand and enhance its postdoctoral education programs, combining advanced clinical and biomedical research training for dentists planning careers in academic dentistry. Other postdoctoral programs have been developed in recent years under the leadership of former dean, Dr. Paul Goldhaber. These include a four-year Doctor of Medical Sciences in Oral Biology program; a five-year Oral and Maxillofacial Surgery/M.D./General Surgery program; and a group of 3 to 4 year, joint-degree programs combining advanced clinical training and research in health-care systems, health policy or biomedical sciences. In addition, an innovative five-year predoctoral curriculum, introduced in 1979, adds a year of biomedical research, training in public health and public policy, or a year of specialty training to the traditional basic science and clinical components.

The Future of the Dental Profession

The practice of dentistry is an exciting and increasingly demanding profession with substantial growth potential. A careful look at demographic trends reveals an aging population retaining more teeth because of the steadily improving oral hygiene and preventive care of the last decades. This trend suggests that, even though there will be fewer extractions, fewer teeth filled in younger generations due to fluoride treatment programs and aggressive education by members of the dental profession, and fewer full dentures in older generations, the need for nearly all other types of dental services will increase, especially in the areas of restorative dentistry, oral surgery, orthognathic surgery, temporomandibular joint therapy, oral cancer, orthodontics, periodontology, fixed prosthodontics and implantology.

Affiliated Teaching Hospitals and Research Centers

Predoctoral and postdoctoral students at the Harvard School of Dental Medicine perform their clinical training and research at many hospitals and centers affiliated with Harvard. These include the following institutions:

Brigham and Women's Hospital
Beth Israel Hospital (Boston)
Brookside Park Family Life Center
Cambridge Hospital
Children's Hospital Medical Center
Dana Farber Cancer Institute
Forsyth Dental Center
Massachusetts Eye and Ear Infirmary
Massachusetts General Hospital
Mout Auburn Hospital
New England Deaconess Hospital
New England Regional Primate Research Center
Veterans Administration Medical Centers

Each institution provides its own unique setting for education and/or research.

Harvard Medical School

Harvard Medical School, the third to be established in the United States, opened in 1782. Like the Harvard School of Dental Medicine's quiet beginnings, instruction commenced with only three professors and a handful of students in the basement of Harvard Hall in Harvard Yard.

The first degrees of Bachelor of Medicine from Harvard University were awarded in 1788. Until 1811, both the Bachelor of Medicine and Doctor of Medicine degrees were conferred, the former upon completion of medical school, the latter on examination at least seven years after graduation. All graduates since 1811 have received the Doctor of Medicine degree.

In the first decade of the 19th century, the medical school was moved from Cambridge to Boston. By 1816, it had its own new building constructed, and a separate Faculty of Medicine was established by a vote of the Harvard Corporation. Between 1816 and 1858, the school bore the title "The Massachusetts Medical College of Harvard University".

In 1869, a great period of reform in medical education began under the leadership of Harvard's president Charles William Eliot. A course of instruction was instituted which included lectures, recitations, clinical teaching, and practical exercises over a three-year period. The vigorous growth which transpired soon brought a need for additional space, and the buildings which now form the present Longwood Avenue quadrangle were opened in 1906.

From its beginnings in a basement with a faculty of three, to its present status as a complex network of clinical and preclinical departments, laboratories and affiliated hospitals, a full- and part-time teaching staff of almost 3000 and a student body of over 700 men and women, the Harvard Medical School has sought to combine growth with excellence in medical education, patient care, and scientific investigation.

Harvard School of Public Health

Harvard School of Public Health is the youngest of the three professional schools in the Harvard Medical Area. Postgraduate education in public health had been steadily increasing at Harvard University for more than two decades before the actual founding of the School in 1922. In 1909, a Department of Preventive Medicine and Hygiene was established at the Medical School - the first such department in the United States. The degree of Doctor of Public Health was first conferred in 1911.

In 1913, the Harvard-Massachusetts Institute of Technology School for Health Officers was formed under the joint management of the two universities. This school operated until the fall of 1922, when it was superseded by the Harvard School of Public Health. In the early years of the School's operation, several of its departments functioned as joint departments with counterparts in the Medical School, sharing facilities, faculty and budgets. In 1946, the School of Public Health was separated administratively and financially from the Medical School and became an autonomous unit of Harvard University. It continues to cooperate with the Medical School in teaching and research, and has also developed close ties with the School of Dental Medicine, the Graduate School of Arts and Sciences, the John F. Kennedy School of Government, and the Graduate School of Business Administration.

The primary mission of the School of Public Health is to carry out teaching and research aimed at improving the health of population groups throughout the world. The School emphasizes not only the development and implementation of disease prevention and treatment programs, but also the planning and management of the systems that are involved in the delivery of health services in this country and abroad.

Admission and Registration

Application, Selection, and Acceptance Procedures

Harvard participates in the American Association of Dental Schools' Application Service (AADSAS) and all applications should be made through this service. The address is: AADSAS, 1625 Massachusetts Ave. N.W., Suite 101, Washington, D.C. 20036. As soon as possible after sending the appropriate materials to AADSAS, each applicant should submit directly to the Harvard School of Dental Medicine an application fee of $62, official high school and college transcripts, letters of recommendation from the undergraduate school's predental advisory committee (if none exists at the school, then from at least three senior science professors) and Dental Admission Test scores.

The selection of students is based on a total appraisal of the suitability of the candidates for the program at Harvard. Factors such as academic achievement in high school and college, performance on the Dental Admission Test, letters of evaluation and personal qualities are weighed in the decision. All decisions are made by the Admissions Committee which includes representation from junior and senior, clinical and basic science faculty, as well as predoctoral and postdoctoral students.

Selection of students is made without restriction based on race, sex, religion, financial resources or residence. Harvard does not discriminate on the basis of handicap. Consistent with Harvard's Affirmative Action Program, women and minorities are encouraged to apply.

Prospective students are urged to apply well before the deadline, preferably from June to September. Personal interviews are required for admission and will be scheduled at the discretion of the Admissions Committee. Applicants who have demonstrated academic ability will be invited for personal interviews by three separate members of the Admissions Committee. In addition, each applicant will be taken to lunch and given a tour of the School by an HSDM student. This provides the applicant with the opportunity to evaluate the program, and facilities, and to become acquainted with students and faculty.

The Admissions Office is frequently able to refer potential applicants to alumni contacts who share common academic and career interests. These graduates of HSDM can respond to questions about departments and curriculum and provide information about career opportunities and alumni activities.

Requirements for Admission

Listed below are the recommended college credits necessary to insure adequate preparation for professional school and to meet present legal requirements of state licensing boards.

Biology: One year of biology which includes adequate laboratory work is required. The combination of one semester of zoology and one semester of botany is acceptable. A satisfactory course must show college credits of approximately eight semester hours.

Chemistry: The student should acquire a sound understanding of the basic principles of chemistry, both inorganic and organic. At least eight semester hours of inorganic chemistry and eight hours of organic chemistry are required.

Physics: The student should acquire an understanding of the general principles of physical laws and phenomena including mechanics, heat, light, sound and electricity. College credit for eight semester hours is required.

English: One year at the college level is required. It is recommended that this include English composition.

Mathematics: A one-year course in calculus is required unless it has been taken in high school.

It is also recommended that applicants have at least two or three advanced science courses such as biochemistry, physiology, molecular biology, or genetics. Study of the social and behavioral sciences, the arts and humanities and a foreign language, such as Spanish, may also increase the student's awareness of the world in which he or she lives, and thus enhance the ability to practice modern dentistry.

The Dental Admission Test: The DAT is given twice a year (April and October) and is required for admission to Harvard School of Dental Medicine. Performance on the DAT is best when taken soon after completion of the required science courses. For most students this would be April of the junior year. It is recommended that the test be taken before the senior year to allow for re-taking, if necessary. Applications may be secured from the Division of Educational Measurements, Council of Dental Education, American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

Housing

Housing is generally available for HSDM students in Vanderbilt Hall which is located on Longwood Avenue in the Harvard Medical Area. Vanderbilt Hall was extensively renovated during the 1989-90 academic year and offers attractive, modernized, and convenient housing.

Inquiries regarding University-owned married student housing should be addressed to Harvard University Housing Office, 7 Holyoke Street, Cambridge, MA 02138. Frequent shuttle bus service is available between these dorms in Cambridge and the Medical Area.

Registration

Registration for predoctoral students is held at the beginning of both fall and spring semesters. The registration process includes demonstration of the payment of term bills and the completion of various written materials as required by the University and the School of Dental Medicine. It is the policy of the School of Dental Medicine that all financial obligations to the University be met before the student is allowed to complete any registration documents or to attend classes, laboratories, or clinics.

Cross-Registration. Students in the School of Dental Medicine may enroll in courses offered at other Harvard schools or at the Massachusetts Institute of Technology. Written consent of the instructor offering the course must be obtained on cross-registration forms which must be signed by the Registrars at both the host school and the School of Dental Medicine. Cross-registration forms may be obtained in the HSDM Office of Curriculum and Student Affairs.

International Students

Policies of the United States Immigration and Naturalization Service have led to new requirements for admission of foreign nationals holding F or J visas. In view of this, Harvard University now requires formal proof of financial resources sufficient to cover costs of tuition and expenses for the entire length of the program of study. Non-U.S. citizens who do not hold Permanent Resident visas at the time of acceptance cannot be admitted without written certification of ability to meet program costs.

Immunizations

The Massachusetts College Immunization Law (Chapter 76, Section 15C) requires that all health sciences students who have patient contact must present evidence of immunity against measles, mumps, rubella, diphtheria and tetanus as a condition of registration. Because of its transmissibility and virulence, immunization for Hepatitis B is highly recommended. Hepatitis B immunization is available to registered dental students from University Health Services. National and local conditions should be monitored to determine the need for influenza immunizations.

Financial Aid

Ida Gelfand Scholarship

The Ida Gelfand Scholarship is given to a few select students who have demonstrated outstanding past scholastic performance and potential for leadership in the dental profession. The award consists of $3,000 for each of the first and second years of study at the Harvard School of Dental Medicine. Recipients of this award are eligible to compete for additional scholarships, training grants, and forms of support available to other students.

Loans and Scholarships

Financial aid in the form of loans, scholarships and work/study is available to eligible students at Harvard School of Dental Medicine. Financial aid is awarded on the basis of need as determined by the Graduate and Professional Schools Financial Aid Service (GAPSFAS) a federally-approved needs analysis system. The School participates in the Title IV Student Assistance Programs and the Federal Health Professions Educational Assistance Programs. Additional loan and scholarship funds are available through the Dental School and through Harvard University.

Scholarships and loan funds may also be obtained from outside agencies, and students are encouraged to pursue such assistance. Interest rates and repayment provisions for the various loan programs differ considerably. Students are advised to consult the Office of Curriculum and Student Affairs at Harvard School of Dental Medicine before making any commitments.

Financial aid funds for individuals who are not U.S. citizens or permanent residents are extremely limited. Foreign students should anticipate that nearly all of their expenses will have to be met by resources outside the School of Dental Medicine.

Holders of F and J visas are not eligible for financial aid from Title IV Student Assistance Programs (Stafford Guaranteed Student Loans, SLS Loans, Perkins Loans, College Work/Study) or from any other federally sponsored programs.

A Financial Aid Bulletin is published by the Office of Curriculum and Student Affairs and will be mailed to applicants who are invited for an interview.

Additional Funding Sources for the Fifth Year

In addition to the usual financial aid available to predoctoral students, two additional options offer possible sources of support during the fifth year of study:

At the end of the fourth year at HSDM, qualified students are issued an Interim Diploma. This diploma is not the DMD degree (awarded after successful completion of the fifth year), but does certify students to take the Northeast Regional Board (NERB) examinations at that time. Students who pass the NERB Examinations are eligible to apply for licensure in Massachusetts and once licensed are thus able to practice dentistry. Such students may apply for an elective program which allows them to participate in a special group practice operating at the School on three weekday evenings and on Saturdays. Practicing in this Licensed Practitioner Clinic (LPC) allows students to earn income from practice while enhancing their skills in clinical dentistry and practice management.

Financial aid is also available in the fifth year from the National Institutes of Health which considers members of our fifth-year class eligible to receive research training grant support as postdoctoral fellows in Harvard dental programs having training grants. These training grants pay a stipend plus most tuition costs for at least three years. Students accepted into selected Harvard postdoctoral programs begin their specialty training during the fifth year. These students may also apply for and receive direct research fellowships that pay a stipend and partial tuition costs throughout the three-year postdoctoral program. It should be noted that, upon completion of the program, such fellowship support requires a year-for-year "payback" (not counting the first year of support) in the form of full-time, salaried employment in an academic institution (dental school, research institute, or teaching hospital) carrying out research and/or teaching, with or without patient-care responsibilities.

Other sources of support during Year V include special foundation scholarships and Harvard School of Dental Medicine scholarships for specific postdoctoral programs. It is of interest to note that more than 50% of the students who have completed the 5-year program were supported by one or more of these sources.

Anticipated Cost of Attendance

Listed on this page are anticipated budgets for the 1991-92 academic year. The budgets are based on average expenses for single and married students. It is anticipated that all tuition and fees will change annually. Every effort will be made to keep the changes to a minimum.

First-Year Students

	Single	Married
Matriculation Fee:	$ 25.	$ 25.
Tuition:	19112.	19112.
Student Health Fees:	1142.	* 2331.
Room:	5150.	9672.
Board:	3120.	4680.
Books and Supplies:	750.	750.
Microscope Rental:	250.	250.
Clothing:	600.	1200.
Laundry/Dry Cleaning:	220.	260.
Recreation:	750.	750.
Miscellaneous:	200.	300.
Travel:	575.	910.
Total:	$ 31894.	$ 40240.

Second-Year Students

	Single	Married
Tuition:	$ 19112.	$ 19112.
Student Health Fees:	1142.	* 2331.
Clinic Fee:	3810.	3810.
Room:	5150.	9672.
Board:	3120.	4680.
Books and Supplies:	750.	750.
Camera Purchase:	750.	750.
Instrument Purchase:	1950.	1950.
Microscope Rental:	250.	250.
Board Examination Fees:	250.	250.
Clothing:	600.	1200.
Laundry/Dry Cleaning:	220.	260.
Recreation:	750.	750.
Miscellaneous:	200.	300.
Travel:	550.	875.
Total:	$ 38629.	$ 46975.

Third-Year Students

	Single	Married
Tuition:	$ 19112.	$ 19112.
Student Health Fees:	1142.	* 2331.
Clinic Fee:	4942.	4942.
Room:	5150.	9672.
Board:	3120.	4680.
Instrument Purchase:	50.	50.
Books and Supplies:	500.	500.
Clothing:	600.	1200.
Laundry/Dry Cleaning:	220.	260.
Recreation:	750.	750.
Miscellaneous:	200.	300.
Travel:	575.	910.
Total:	$ 36361.	$ 44707.

Fourth-Year Students

	Single	Married
Tuition:	$ 19112.	$ 19112.
Student Health Fees:	1142.	* 2331.
Clinic Fee:	1772.	1772.
Room:	5150.	9673.
Board:	3120.	4680.
Books and Supplies:	80.	80.
Board Examination Fees:	700.	700.
Clothing:	600.	1200.
Laundry/Dry Cleaning:	220.	260.
Recreation:	750.	750.
Miscellaneous:	200.	300.
Travel:	575.	910.
Total:	$ 33421.	$ 41767.

Fifth-Year Students

	Single	Married
Tuition:	$ 19112.	$ 19112.
Student Health Fees:	1142.	* 2331.
Room:	5150.	9672.
Board:	3120.	4680.
Books and Supplies:	150.	150.
Clothing:	600.	1200.
Laundry/Dry Cleaning:	220.	260.
Recreation:	750.	750.
Miscellaneous:	200.	300.
Travel:	575.	910.
Total:	$ 31019.	$ 39365.

* Additional charge for Blue Cross/Blue Shield coverage for children.

Curriculum

The predoctoral curriculum is divided into four major areas which run consecutively:

Basic Science/Preclinical Core: 20 months

Major Clinical Dentistry Period: 13 months

Externship/Elective Period: 11 months

Health Care Research/Biomedical Research: 11 months

Years 1 and 2
Basic Science/Preclinical Core

In simplest terms, the philosophy of dental education at Harvard is that dentistry is a specialty of medicine. As a medical specialist, the dentist is part of the health care team; knowledge of the anatomy and physiology of the mouth alone will not suffice for the dental practitioner who hopes to comprehend the biological basis for the etiology and treatment of oral and systemic disease. In keeping with this belief, the curriculum allows medical and dental students to study the preclinical basic sciences together. The Harvard Medical School's core curriculum in the preclinical sciences (the "New Pathway") is a rigorous, well-balanced introduction to medicine which provides the student with a firm background in the fundamentals of the following areas:

The Human Body

Metabolism and Function of Human Organ Systems

Genetics, Embryology and Reproduction

Identity, Microbes and Defense

Principles of Pharmacology

Human Nervous Systems and Behavior

Human Systems

Patient/Doctor

Introduction to Clinical Medicine

Successful completion of this two-year long component of the curriculum ensures the future dental clinician a firm biological basis for understanding complicated medical conditions with which patients may be presented. Course descriptions of the basic science core begin on page 24.

The "New Pathway" is a problem-based method of study. For the first two years, each medical and dental student is assigned to one of four teaching societies at Harvard Medical School. The societies, each with a Master and several faculty advisors and tutors, are then further divided into small groups of 8 students and 1 tutor. In these tutorial groups, cases based on actual clinical records or investigative problems are utilized and include learning objectives in the biosciences, behavioral sciences, social medicine, health promotion/disease prevention, critical analysis and clinical issues. Case discussion and independent study is supplemented by lectures, laboratory exercises and student-initiated contact with expert faculty resource persons.

An important part of the core curriculum is Patient/Doctor which is taught throughout Year I. Designed around a series of clinical experiences, the student learns first-hand from patients about the impact of illness on their lives and what they expect from their physicians and dentists. Clinical sessions and tutorials are supplemented with readings from the social and behavioral sciences, the clinical literature, and the medical humanities.

Patient/Doctor is followed in Year II by Introduction to Clinical Medicine (ICM), an externship which is taken with medical students at one of the Harvard-affiliated teaching hospitals. The ICM externship introduces the student to the art of interacting with patients and establishing the close relationships necessary to achieve effective diagnosis and treatment. It also provides instruction in the basic techniques of interviewing and examining patients as well as the methodology of problem solving: how and when to use particular skills and how to adapt techniques of problem solving to specific clinical problems.

In order to introduce the dental student to concepts in oral health, six additional courses are part of the curriculum of the first two years:

Oral Biology
The study of the biological principles of dental and oral sciences.

Oral Pathology
The study of the clinical, radiographic, and microscopic features of diseases of the teeth, mouth, jaws, and salivary glands.

Oral Radiology
The study of radiological technique and interpretation.

Gerontology
The study of the changes and conditions which occur with aging.

Dental Anatomy
The study of the structure of the teeth and their correlated parts.

Occlusion
The study of the contact relationship of teeth resulting from neuromuscular control of the masticatory system.

Year 3
Major Clinical Dentistry Period

During the months of June and July after the fourth semester, and continuing through semesters five and six (Year III), students are involved full-time in clinical training at the Dental School. Material is presented in the form of lectures, seminars, demonstrations, and individual chairside instruction. The basics of diagnosis, prevention, and therapy of oral disease are covered in detail in both department-specific and interdisciplinary formats. The high faculty:student ratio at HSDM encourages high standards of preparation and individual chairside instruction in several clinical fields:

Endontics
Implant Dentistry
Operative Dentistry
Oral Diagnosis
Oral Medicine
Oral Radiology
Oral and Maxillofacial Surgery
Orthodontics
Pain Control
Pediatric Dentistry
Periodontology
Preventive Dentistry
Prosthodontics
Treatment Planning

For detailed descriptions of courses taught in Year III, refer to pages 27 through 38.

Year 4
Externship/Elective Period

The Externship/Elective Period follows the Major Clinical Dentistry Period and runs from August following Year III into June of Year IV.

After the student has mastered the basic didactic material and clinical skills required in general dentistry, the Externship Period provides the opportunity to enhance clinical skills and judgement outside the dental school environment and to learn how dental health care is integrated with total health care delivery.

During the Externship Period, the student participates in patient care activities at selected Harvard-affiliated institutions listed below:

General Dentistry
Veterans Administration Medical Centers/ Hospitals: 12 weeks

Pediatric Dentistry
Children's Hospital Medical Center: 4 weeks

Oral and Maxillofacial Surgery
Massachusetts General Hospital: 4 weeks

Advanced Restorative Dentistry
Harvard School of Dental Medicine: 4 weeks

Ample opportunity thus exists during Year IV for students to reinforce their skills in general dentistry. Students also return to the School of Dental Medicine one day per week for a Comprehensive Care Clinic where they are able to continue to treat and follow their HSDM patients, and take mandatory courses in Practice Management, Advanced Occlusion, and Case Presentation.

The Elective Period during the fourth year also consists of approximately two to three months of elective courses or programs for students who have completed all clinical and didactic requirements.

Examples of recent fourth year electives are:

- Anesthesia
- Dental Care Administration
- Dermatology
- Exchange Programs (foreign or U.S.-based)
- General Dentistry (at several sites)
- Implantology
- Intravenous Sedation
- Oral Medicine
- Oral Pathology
- Oral and Maxillofacial Surgery
- Otolaryngology
- Pediatric Dentistry
- Pediatric Oral and Maxillofacial Surgery
- Research

Year 5
Research and Specialization

The fifth year of the predoctoral curriculum permits students to follow their interests in either biomedical sciences or health care delivery. Both tracks provide an intensive research experience and advanced coursework related to the area of research, culminating in the writing and defense of a thesis. Alternatively, students who have been accepted to selected HSDM postdoctoral programs may begin their speciality training during the fifth year.

Health Care Research Track

The Health Care Research Track of the five-year curriculum is designed to prepare dentists who, in addition to being well trained clinicians with a broad biomedical knowledge base, can eventually assume leadership roles in preventive dentistry, health care administration, and public policy. Training in the Health Care Research Track is done in consultation with the Department of Dental Care Administration, and consists of appropriate courses which may be selected from Harvard School of Public Health (HSPH), Kennedy School of Government, and Harvard School of Dental Medicine or other collaborating institutions. An acceptable research thesis related to health care issues is required.

It is possible for students who are accepted for admission to earn a Master of Public Health or Master of Science degree from HSPH during the fifth year and receive both the D.M.D. and M.P.H. or M.S. degrees upon graduation. The fifth year can also be used to begin a Master of Public Policy program at the Kennedy School of Government if the student is accepted for admission. Additional time beyond the fifth year is generally required for completion of the M.P.P. degree.

For students interested in international oral health problems, arrangements may be made to spend 3-5 months of the fifth year in a developing country performing research and/or patient care services. Several agencies, including the Peace Corps and Project Hope offer possible support for travel and living expenses. Opportunities also exist for research and patient care on Indian reservations under the auspices of the Indian Health Service or at the National Institute of Dental Research under the COSTEP program.

Biomedical Research Track

The Biomedical Research Track of the predoctoral five-year curriculum is designed to prepare dentists who, in addition to being well trained clinicians with a broad biomedical knowledge base, can ultimately design, conduct, evaluate and make original contributions to biomedical research. Research training is done under the direction of a research sponsor, and includes appropriate courses from faculties throughout the University.

Students who wish to broaden their experience in clinical medicine may also choose to spend 3-5 months of the fifth year in appropriate medical clerkships such as medicine, ambulatory care, anesthesiology, otolaryngology, dermatology, etc.

Postdoctoral Programs

The fifth year in either track may be credited toward Harvard postdoctoral programs that require a year of biomedical research or health care research. These programs include Orthodontics, Oral Pathology, Pediatric Dentistry, Periodontology, Prosthetic Dentistry, Implant Dentistry, Dental Public Health, Epidemiology, or General Dentistry. They may be combined with studies leading to a degree in Public Health, Health Policy and Management, Public Policy, or Biomedical Research. In some cases, clinical specialty training may be followed by a program leading to the M.D. degree and an appropriate medical internship. All advanced degree programs at HSDM and other schools of the University require admission by the respective committees on admission. Students who graduate at the end of the fifth year receive the D.M.D. and have completed the first year of of specialty training.

In addition to specialty programs offered within the School of Dental Medicine, postdoctoral programs in the form of hospital-based residencies are available through Harvard's affiliated teaching hospitals. These include: Oral and Maxillofacial Surgery (Massachusetts General Hospital); Periodontology (West Roxbury VA Medical Center); Prosthetic Dentistry (VA Boston Outpatient Clinic); General Dentistry (Brigham and Women's Hospital and West Roxbury/Brockton VA Medical Centers).

Research

Harvard School of Dental Medicine considers the generation of knowledge to be an integral part of the training of future leaders in the field of dentistry. In recognition of this goal, predoctoral students are required to explore and develop interest in a relevant special field, resulting in the completion of two separate research projects within the five year curriculum.

During the first year at HSDM, the student is aided in selecting a research sponsor in an appropriate area of biomedical research or in health care delivery research. Over the next two years, the student is encouraged to participate in research experiences which form a foundation from which the student develops and presents a research proposal towards the end of the third year, then submits and presents the results of that research at the end of the fourth year.

Students who have made significant progress in their research during the first four years of the five year program are in a favorable position to apply to public and private agencies for available fellowships to partially support their fifth year and/or several more years of training in a combined postdoctoral program.

The second research requirement is fulfilled during the fifth year, in either a health care or biomedical research track. It may consist of a more extensive development of the earlier research subject, or a completely new topic of interest. The written thesis is defended before a thesis committee and presented to faculty and students. Research Honors awarded to graduates of the five-year curriculum are based upon evaluation of all research accomplished in the five-year program.

Honors and Awards

The School of Dental Medicine confers the following honors and awards to its most distinguished students each year at graduation:

Honors in a Special Field: cum laude, magna cum laude, summa cum laude

General Honors: cum laude, magna cum laude, summa cum laude

Harvard Dental Alumni Association Gold Medal Award: Given for all-round scholastic excellence in the course of study over five years.

Harvard Dental Alumni Association Silver Medal Award: Given for all-round scholastic excellence in the course of study over five years.

Dr. Norman B. Nesbett Medal: Given by the Harvard Dental Alumni Association to the graduating student who has shown excellence in the field of clinical dentistry.

Dr. Grace Milliken Award: Given annually to the student who has submitted the outstanding essay (thesis) on the general subject of dental health.

Dr. Paul E. Boyle Award: Given for high scholastic achievement in Oral Pathology.

Dr. Roy O. Greep Award: Given for high scholastic achievement in coursework in the Basic Sciences.

Harvard Odontological Society Award: Given annually by the Harvard Odontological Society for the best seminar thesis in the graduating class.

Omicron Kappa Upsilon: Given to three students in the graduating class as nominated for membership in this Honorary Dental Society.

Pierre Fauchard Academy Award: Given to the student who has exhibited outstanding leadership and dedication to the advancement of dental literature.

International College of Dentists Award: Given to the student who has demonstrated the most professional growth and development.

Alpha Omega Award: Given to the student who has achieved the highest scholastic average.

American Association of Women Dentists Award: Given to the woman who has shown outstanding leadership and academic excellence.

Curriculum Outline

Years 1 and 2
Coursework

Basic Sciences (New Pathway)

The Body
- Gross Anatomy
- Histology

Metabolism and Function
- Biochemistry
- Physiology

Genetics/Embryology/Reproduction

Identity/Microbes/Defense

Neurosciences

Human Systems
- Cardiovascular
- Endocrine
- Gastrointestinal
- Hematology
- Infectious Disease
- Musculoskeletal
- Renal
- Reproductive
- Respiratory
- Skin

Preclinical Coursework

Head and Neck Anatomy

Oral Biology

Oral Pathology

Oral Radiology

Dental Anatomy

Occlusion

Operative Dentistry

Patient/Doctor Relationships I, II

Introduction to Clinical Medicine

Year 3
Major Clinical Dentistry

Clinical

Dental Auxiliary Utilization

Dental Materials

Endodontics

Implant Dentistry

Operative Dentistry

Oral and Maxillofacial Surgery

Orthodontics

Pain Control

Pediatric Dentistry

Periodontology

Preventive Dentistry

Prosthodontics

Diagnostic

Case Presentations

Oral Comprehensive Exams

Oral Diagnosis

Oral Medicine/Oral Radiology

Radiology

Treatment Planning

Behavioral

Biostatistics

Patient/Doctor Relationships III
- Behavioral Sciences
- Dental Care Administration
- Ethics
- Gerontology
- Geriatric Dentistry

Research

Computer Science/Research Methods

Year 4
Externships/Electives

Required Rotations

General Dentistry (Selected VA Hospital)

Pediatric Dentistry (Children's Hospital)

Oral and Maxillofacial Surgery (Massachusetts General Hospital)

Advanced Operative Dentistry

Comprehensive Care Clinic

Elective Rotations

Research

Medical Rotations
- Anesthesiology
- Dermatology
- Otolaryngology
- Ambulatory Care

Dental Care Administration

Comprehensive Patient Care

Exchange Program (US or Foreign)

Year 5
Research/Specialization

Biomedical Research Track
- Coursework/Clerkships/Thesis

Health Care Research Track
- Cousework/Thesis
- Conjoint Programs: MPH, MS, MPP

Postdoctoral Specialty Program: Year 1

International Programs
- Peace Corps/Project Hope
- Indian Health Service

Board Examinations and Licensure

National Board Dental Examinations
The results from the National Board Dental Examinations are used by state boards to determine if dentists who are applying for licensure are qualified to practice dentistry. These boards are given in two parts, both of which must be passed before graduating from HSDM. Part I is taken at the end of Year II and is made up of four examinations which test knowledge of the basic biomedical sciences:

- Anatomic Sciences
- Biochemistry-Physiology
- Microbiology-Pathology
- Dental Anatomy

Part II is taken in December of Year IV. Its seven examinations cover clinical subjects:

- Operative Dentistry
- Pharmacology
- Prosthodontics
- Oral Surgery-Pain Control
- Orthodontics-Pediatric Dentistry
- Endodontics-Periodontics
- Oral Pathology and Dental Radiology

North East Regional Board Dental Examinations/Licensure
The North East Regional Board (NERB) Dental Examinations may be taken at the end of Year IV by HSDM students who have met the academic and clinical requirements established by the School. These exams are comprised of one-half day of written and two full days of clinical testing. The NERB is required for licensure in the Commonwealth of Massachusetts as well as in 14 other states in the north and northeast.

To assist students in preparation for the NERB Examinations, the School administers a Mock NERB examination which parallels the format of the actual examination. Although passing of the NERB Examinations is not a requirement for the D.M.D. degree, all students are required to take and pass the Mock NERB examination administered by the School.

Students who have passed the NERB and who have subsequently obtained a Massachusetts license are then eligible to participate in the advanced student Licensed Practitioner Clinic (LPC) in Year V. This clinic was established at HSDM to provide a convenient setting outside of the usual school hours in which selected, licensed fifth year students and other approved advanced students can provide dental care in a licensed student group practice setting. It provides an opportunity for students to maintain and enhance their clinical proficiency through practice in an environment which offers faculty supervisor consultation and assessment similar to a general practice residency. Students can earn income from this dental practice at times that do not conflict with their academic programs.

Subject Examinations of the National Board of Medical Examiners
In addition to the Dental Boards, HSDM students are encouraged to take the Subject Examinations of the National Board of Medical Examiners because they are required for entrance into the Harvard Medical School for the M.D. component of a combined M.D. - dental specialty program. It is recommended that these examinations be taken prior to the start of the third year.

General Regulations and Requirements

Student Records

Official student records contain admissions credentials and transcripts of current and previous academic work. They are maintained in the HSDM Office of Curriculum and Student Affairs. The Family Educational Rights and Privacy Act of 1974 requires that the institution protect the confidentiality of student educational records. Students have access to all parts of their records except recommendations submitted as part of the application for admission. Only the President, Dean, or the Registrar have the power to authorize the release of educational records to any external agent or to permit any such agent access to these records. Student records are accessible to faculty members, deans, and staff who have a legitimate educational interest in their review.

It is the ordinary practice of HSDM to provide directory information at its discretion. Students may instruct the Office of Curriculum and Student Affairs to withhold the release of directory information by providing written notice at the time of registration in the fall semester. This request must be filed annually.

Transcripts will be released upon written request of the student. Enrolled students can obtain a Transcript Release Form in the Office of Curriculum and Student Affairs. Former students and graduates should submit a written request to the Office of Curriculum and Student Affairs. This service is free for all currently registered students. There is a $2.00 charge per transcript for all former students and graduates.

Promotions

The Committee on Promotions and Examinations (Promotions Board) is appointed by the Dean and consists of faculty representatives from the preclinical and clinical courses, the Associate Dean for Curriculum and Student Affairs and the Dean. The Board meets at regular intervals and considers the academic performance of the students at all levels of the academic program. The progress of the preclinical classes is reviewed at least twice per academic year; the clinical care reviewed more frequently. Actions of the Board include promotion without qualification, promotion with re-examination or other modification of the schedule, repeat of a course, semester or year with specific conditions, granting leaves of absence, recommendation of withdrawal from the School, dismissal, and admittance with advanced standing.

Conformance with the rules governing courses, examinations, National Board Examinations, and promotions are generally monitored by the Associate Dean for Curriculum and Student Affairs, with the guidance of the Dean's Office and the Promotions Board. Except where otherwise stated, waiver of these rules requires approval of the Executive Committee. Detailed policies and guidelines governing promotion in the preclinical and clinical years are distributed each year by the Office of Curriculum and Student Affairs and may be obtained by contacting that office.

Withdrawal/Leave of Absence

Students who elect to interrupt their dental studies at the Harvard School of Dental Medicine must either take a Leave of Absence or Withdraw.

Leave of Absence: Leaves of absence will be granted rarely, and in most instances only under such circumstances as pregnancy or serious illness (verified by Harvard Health Services). All leaves of absence will be considered individually and decided on their own merit. No academic credit toward the D.M.D. degree is ordinarily granted by the

Dental School to a student on leave of absence. The leave is generally granted for one academic year. Students may be required to return in advance of readmittance for remedial/preparatory instruction. A written request for leave of absence must be submitted to the Office of Curriculum and Student Affairs and will be reviewed for approval by the Promotions Board.

Leaves of Absence are not required for HSDM students who are pursuing the non-dental portion of recognized joint degree programs. Students enrolled in such programs will maintain dual registration at HSDM and at the other institution.

Withdrawal: Students who desire to leave HSDM and who are not eligible for a leave of absence must withdraw. Students who withdraw in good standing will be considered for readmission upon written request. Favorable consideration will be on a space available basis.

More detailed Withdrawal/Leave of Absence policies and guidelines may be obtained in the Office of Curriculum and Student Affairs.

Review of Academic Performance and Professional Conduct

Members of the faculty of the School of Dental Medicine have the right and the responsibility to assure that each student, while enrolled in the Harvard School of Dental Medicine, demonstrates the academic performance and professional conduct appropriate to the practice of dental medicine.

Academic Performance: The HSDM Committee on Promotions and Examinations (Promotions Board) reviews all grades, evaluations, and reports of academic achievement. Any student who shows a deficiency in performance is notified in writing by this Board of the actions it has taken. If the student wishes to appeal the decision, he/she must reply in writing to the Board within two weeks stating reasons for reconsideration. From this point the Promotions Board may reaffirm or revise its judgment. The appeals process may continue through channels to the Dean of the School. The Dean's decision is final and binding.

Professional Conduct: Any instances of inappropriate behavior should be brought to the attention of the Associate Dean for Curriculum and Student Affairs. Such behavior might include cheating or unauthorized use of materials in academic exercises or examinations; misrepresentations, distortions or serious omissions in data or research reports; improper conduct in relation to patients or colleagues in clinical training settings; and repeated failures without adequate excuse to meet assigned obligations in professional, clinical, or research training programs. A committee appointed by the Dean reviews the complaints and decides if further action is necessary. The student is notified in writing of any decisions made. If the student wishes to appeal, a statement of the reasons for reconsideration must be submitted in writing to the Dean within two weeks. The committee may then reaffirm or revise its judgment. The appeals process may continue through channels, including personal interviews. The final decision will rest with the Dean of the School.

A more detailed policy and procedure statement can be obtained in the Office of Curriculum and Student Affairs.

Grievance

From time to time the need arises for a prompt and equitable resolution of grievances alleging discrimination on the basis of race, color, age, religion, national or ethnic origin, sex, sexual orientation, political beliefs, handicap or veteran status. In order to respond to this need and to comply with federal regulations, procedures have been developed for dental students.

Students with a grievance concerning discrimination are urged to discuss it and seek resolution of the problem with the instructor or staff member who may be involved before going to that person's superior. If the student feels that these discussions are unsatisfactory, s/he can then present the problem to the Associate Dean for Curriculum and Student Affairs. If the problem has still not been resolved satisfactorily, the student can then present the problem to the Dean of the School of Dental Medicine.

A more detailed description of the HSDM grievance procedure may be obtained in the Office of Curriculum and Student Affairs.

Student Attendance

Attendance at all HSDM scheduled classes and clinics is mandatory. Unexcused absences may result in grade reduction, course failure, or dismissal.

Tuition Payment

It is the policy of the Harvard School of Dental Medicine that all financial obligations be met prior to registration. Fall semester term bills are mailed to entering and continuing students at least one month prior to registration. Students not receiving financial aid are expected to pay the entire term bill balance prior to the start of the school year. Detailed instructions accompany the summer term bill to assist students who have been awarded financial aid in calculating the amount to be paid with personal funds. The registration process for aid recipients will include the signing of necessary promissory notes and the endorsing of checks for student loans.

Term bills with spring semester charges are mailed to students at the end of December, and payment is due by spring term registration which is generally held during the first week of February.

Students who have not met their financial obligations to Harvard University will be denied admittance to all classes, laboratories, and clinics.

Student Life

HSDM Office of Curriculum & Student Affairs

The HSDM Office of Curriculum & Student Affairs, under the direction of the Associate Dean for Curriculum & Student Affairs, is responsible for all aspects of student life. The activities of the Office include registration, financial aid management, curriculum development and implementation, academic and personal counseling, and committee representation. The administration of the National Board Dental Examinations, and the Subject Exams of the National Board Medical Examinations also falls under its jurisdiction. In addition, the Associate Dean and his staff direct incoming student orientation, organize commencement activities, oversee the activities of HSDM student organizations, and coordinate the International Exchange Student Program. Committed to his role as student advocate, the Associate Dean strives to keep the lines of communication open among administration, students, and faculty, and to serve as an administrative and personal resource throughout the predoctoral years.

Facilities

Vanderbilt Hall

The dormitory for Harvard Medical and Dental students is Vanderbilt Hall, located on the corner of Longwood Avenue and Avenue Louis Pasteur, across the street from the quadrangle where basic science courses are taught. In addition to 325 students' rooms, Vanderbilt Hall has a dining room, common room, darkroom, woodworking shop, and two music rooms. Athletic facilities include a regulation outdoor tennis court, an indoor basketball court, racquetball courts, a self-defense room, squash courts and two weight rooms. Showers and lockers are available to students who reside off campus.

Quadrangle

Five marble buildings, creating a U around the Longwood Avenue Quadrangle, form the central architectural core of the Harvard Medical School. Three of the buildings have large teaching amphitheaters. Administrative offices are in Building A, located at the far end of the U; buildings B and D flank the right side of the quadrangle, and C and E the left, facing Longwood Avenue. Preclinical teaching and laboratory space for the Departments of Anatomy and Cellular Biology, Biological Chemistry and Molecular Pharmacology, Cellular and Molecular Physiology, Microbiology and Molecular Genetics, Neurobiology, Pathology, and Pathophysiology, together with research facilities and offices, are housed in these structures. Offices and laboratories of other administrative and teaching departments are located on Longwood Avenue and Huntington Avenue, in an area roughly adjacent to the quadrangle.

Medical Education Center

The dental student's first two years of core curriculum classes are held in the laboratories, lecture halls, and conference rooms of the new Medical Education Center, located on Longwood Avenue directly across from Vanderbilt Hall. Designed with the New Pathway study method in mind, the MEC is designed around a three-story glass covered atrium. This building contains a commons room and small café for students and faculty, student study clusters, an amphitheater, and a suite of rooms containing video recording equipment to be used for patient interviews and examinations. The Center is also the home of two Medical School administrative units: the New Pathway Project and the Office for Educational Support.

Countway Library

The Francis A. Countway Library of Medicine opened in June, 1965. Located at 10 Shattuck Street, it combines the resources and services of the Harvard Medical Library and the Boston Medical Library. Among libraries serving health professional schools, it is one of the largest in the country, with recorded holdings of nearly 500,000 volumes and more than 5,000 current periodicals.

In addition to contemporary literature of biomedicine, both national and international, the Library possesses most of the important writings of medical interest published in the United States and Europe during the previous four centuries, including more than 800 incunabula (books published before 1501). Items of considerable value or great rarity are housed in the Rare Books Department, which provides modern facilities for the use of such materials.

The Countway utilizes a number of modern technological tools in its services and collecting: MED-LINE and other sophisticated computerized bibliographic search services; computer-assisted instruction; extensive photocopying facilities; and audio-visual hardware and software which are provided in partnership with the Medical School's Department of Educational Programs.

The Library building combines utilitarian and aesthetic qualities with unusual success. Bookstacks are arranged around a central court with individual or group seating, and study facilities are located around the periphery of the building. This promotes easy access to the modern collections, from which items can be selected and then examined nearby in a setting removed from noise and distractions.

The extensive collections of the Harvard College Library and libraries of the other faculties and departments of the University complement the total book and periodical resources available to Medical Area students, faculty, and staff. Other libraries in the Boston area, notably those of the Massachusetts Institute of Technology, augment the resources available at Harvard.

Health Services

University Health Services provides comprehensive prepaid health care for the students at Harvard University. This includes physical examinations, physician visits, laboratory tests, and psychological counseling. Students are urged to select a UHS physician and to establish a relationship with him or her as if s/he were a family physician. A walk-in clinic is provided for acute medical and surgical situations. Payment of the University Health Services fee is mandatory for all HSDM students.

The Blue Cross/Blue Shield medical insurance plan is charged separately from the University Health Services fee and covers the costs of many types of medical care not offered at University Health Services. This insurance is compulsory for all nonimmigrant students from abroad as well as for all other students who do not have comparable insurance. Students who do have comparable insurance and who would prefer not to enroll in BC/BS must submit a waiver form prior to the time of fall registration.

Married students may opt to purchase Blue Cross/Blue Shield family insurance. It is also possible to purchase University Health Service coverage for a spouse and/or children.

Student Organizations

American Association of Dental Schools

AADS is an organization of students (both dental and auxiliary) and educators whose purpose is "to promote the advancement of dental education, research, and service in all institutions that offer appropriately accredited programs for dental personnel".

HSDM AADS activities focus on discussions of issues affecting dental students all over the country such as admissions policies, student input into curriculum changes and faculty evaluation, financial aid counselling, and advanced dental education. Meetings are held 4 or 5 times a year with refreshments.

Student members receive monthly issues of the Journal of Dental Education and Bulletin of Dental Education as well as any mailings by the three special interest groups to which each member may elect to belong.

American Student Dental Association

ASDA is the student-born affiliate of the American Dental Association and has over 16,000 dental student members. Through ASDA, dental students are kept informed about current issues in dentistry (such as deduction of loan interest, malpractice insurance, free hygienist practice and denturism) and their impact on the future of the profession. Members are also informed of issues directly affecting the student: student loan programs and other available financial aid and board exam changes. Students also have the opportunity to become actively involved in the organization, which can include externships in Washington or Chicago, or working closely with ADA staff. In addition, there is potential to interact with other dental students nationwide.

Other membership benefits include ASDA's journal Dentistry, the ASDA Handbook (a quick reference to all the benefits of ASDA), ASDA News, ADA News, The Journal of the American Dental Association, Board Exam reprints, a member's Mastercard, free life insurance, savings on ADA membership, Residency Guide handbooks, and more.

Student National Dental Association

The SNDA was founded and incorporated as a non-profit organization in 1972 by a group of Black dental students in Pennsylvania. The Harvard Chapter of the SNDA was chartered in 1977. The founders of the SNDA sought to develop an organization that would speak to such things as recruitment and retention of minorities in dentistry, the dental health needs of minority communities, and future issues confronting organized dentistry. SNDA's activities include: various programs in the community to provoke interest in dentistry as well as teach preventive dentistry; seminars and lectures addressing important issues in dentistry, and distribution of information about graduate programs, scholarships, loans and jobs.

HSDM Student Council

The Student Council is the central organization governing student concerns at HSDM. It is composed of the following elected representatives ftom each class: 2 Class Representatives and 1 Curriculum Representative from each class, plus one reptesentative each from ASDA, AADS, and SNDA. The objectives of the student council are to promote unity between the classes; to coordinate student efforts which will enhance the educational and social experiences of each student; to maintain open communication and cooperation among membets of the administration, faculty, and student body; and to provide a channel to enhance alumni relations.

HMS/HSDM Student Council

The HMS/HSDM Student Council serves as the student government, creating a forum for the discussion and expression of student opinions and concerns. It provides funding for many student groups including social and athletic organizations, the student newspaper, women's and minority organizations, religious, national and special interest groups. Four representatives are elected from HMS, one from HSDM, one from HST, and one each from various student organizations.

Athletics

As well as being the student dormitory, Vanderbilt Hall is the athletic center of the Harvard Medical Area due to its indoor basketball court, five squash courts, weight room and exercise room. Women's and men's locker rooms and showers are also available within the building. Various tournaments and leagues are organized throughout the yeat in squash, basketball, softball, aerobics, and tennis. The Vanderbilt Hall Manager's office can provide more information at 432-1630.

There are numerous sports facilities located throughout the Cambridge campus of Harvard University. Any Harvard School of Dental Medicine student may use these facilities by obtaining an athletic participation sticker from the HSDM Administration Office. Harvard University sponsored sports include running, sailing, sculling and swimming. A brochure containing detailed descriptions of recreational facilities and activities can be obtained from the Department of Athletics at 495-4838.

Religious Life

Diverse houses of worship can be found near the medical area: Catholic, Protestant, Jewish, Russian Orthodox, and Greek Orthodox. In addition, there are religious student organizations sponsored by the Harvard Medical School and School of Dental Medicine, such as the Christian Medical Society and the Maimonides Medical Society. These provide fellowship, retreats, special programs, and various social activities for interested students.

Minority Students

One finds great diversity among HSDM students and students within the medical area in general, showing Harvard's strong commitment to aggressive minority admissions and hiring practices. There are a number of university sponsored minority organizations on campus to provide support and a sense of community: the National Chicano Health Organization, Black Health Organization, Boricua Health Organization and Native American Health Organization as well as the larger Third World Caucus umbrella organization. These groups hold regular meetings to discuss relevant minority health and medical issues and organize numerous social events such as dances, talent shows, and Martin Luther King Day celebrations.

International Students

The Harvard School of Dental Medicine is fortunate to have students from a number of foreign countries. Harvard University's International Office was established to provide students from outside the US with visa information and to help them understand immigration regulations. It also administers the Host Family Program which matches foreign students with American families who welcome them to the US and help ease their cultural transition. The Office operates a furniture exchange during the summer and fall, providing low-cost secondhand furniture to students arriving from abroad. The Furniture Exchange is located in the basement of Perkins Hall in Cambridge (telephone 495-9320). Its hours are Tuesday from 10 am to 2pm and 5pm to 7pm and Thursday from 10am to 2pm. For more information about either of these two programs, contact the Harvard International Office, 1350 Massachusetts Avenue, Cambridge, MA 02138 (telephone 617/495-2789).

Child Care

There are several day care centers on the Cambridge campus and in the Harvard Medical Area. There are also a limited number of spaces available at the Roxbury Tenants of Harvard Child Care Center and at the Longwood Area Children's Center. As all are

quickly filled, parents are urged to make arrangements as early as possible. For further information about day care centers, family day care, nursery, private, after school and summer programs, contact the Office for Parenting at (617) 732-1615.

Harvard Dental Alumni Association

The Harvard Dental Alumni Association was established in 1871 to promote the interests of the School and its alumni. All predoctoral and postdoctoral alumni and all faculty may become members of the Association. The Association sponsors an annual Alumni Day at the School, publishes the Harvard Dental Alumni Bulletin and actively supports the student body through informal meetings with students and through the Dental Alumni Loan Fund.

Harvard Odontological Society

The Harvard Odontological Society was founded in 1878 to provide fellowship among Harvard Dental alumni and to help keep them abreast of developments in "the Art and Science of Dentistry." All alumni and members of the faculty may apply for membership. The Society currently holds five dinner meetings each year in the Boston area, providing members the opportunity to hear a guest speaker on a topic of relevance to dentistry. Members of the graduating class are customarily invited to the Annual Meeting, and the Society supports a Student Loan Fund which it has established at the School.

Transportation and Parking

Parking is scarce in the Harvard Medical Area due to the concentration of schools and hospitals. Students wishing to be included on a waiting list for a permanent parking place in a Harvard lot, may contact Parking and Security at 432-1111.

Free shuttle bus service between the Harvard Medical Area, MIT, and the Harvard Yard is available to all students, faculty and staff with valid Harvard IDs. Buses run Monday through Friday every half hour during the day (more often at rush hour), hourly at night and hourly all day Saturday. Schedules can be obtained from 221 Longwood Avenue or at the Cash Receipts Office on the third floor of Holyoke Center. For further information call the MASCO Transportation Office at 732-2384.

Boston's rapid transit system is called the "T" (short for MBTA - Massachusetts Bay Transportation Authority). Its four streetcar and subway lines radiate outward from the downtown area and provide convenient service to most points in and around the city. Bus service provides access to additional areas. Frequent "T" users can purchase a monthly pass which permits unlimited MBTA use. Call the MASCO transportation office at 732-2384 for more information.

Departments of Instruction and Course Descriptions

Basic Science Core*

The Human Body*

The Human Body is an eight-week intensive introduction to the basic sciences, centered on the structure of biological systems from molecules to organisms. It is taught using problem-solving, case-based methods in small tutorial sessions and laboratories. Medical cases guide and define learning agendas which are set in the individual tutorials. Occasional lectures will focus on general principles and will not offer systematic coverage of the course material. The laboratories offer experience in solving structural problems in cell biology and histology, gross anatomy and radiology. The central focus of the course is to integrate structural principles across all levels of magnification, and to build a fundamental knowledge of structure/correlation and general systems rules. Six to eight hours of study outside class time are expected each day. Students are expected to develop their own learning agendas in the tutorial groups and in individual study.

Course Director: Dr. Goodenough.
Offered: September-October of Year I.
Format: lecture, laboratory, tutorial.
Evaluation: two examinations, classroom performance.

Metabolism and Function of Human Organ Systems*

This is a dual program consisting of parallel courses in Biochemistry and Physiology, which will be related wherever possible. It may be described as an introduction to the interrelationships of function and structure, from the molecular to the organismic level of organization. Selected topics in biochemistry, biophysics, physiology, and molecular biology are presented in a format that includes a variety of learning methods, e.g., problem solving. Emphasis is on the regulation of metabolism; the organization and regulation of muscular, cardiovascular, gastrointestinal, respiratory, and renal function; the transport of solute and water, and on homeostasis and feedback regulation. Clinical aspects of the cases studied in tutorials are integrated with the basic science objectives of the course.

Course Directors: Drs. Hess, Karnovsky, Zetter.
Offered: November-January of Year I.
Format: lecture, conferences, tutorial.
Evaluation: two written examinations and tutorial performance.

Genetics, Embryology and Reproduction*

This course will focus on fundamental aspects of human genetics, reproduction, early development and morphogenesis. Both classical and molecular genetics will be addressed, with particular application to human biology and medicine. Laws that govern inheritance and variation among individuals and populations will be considered, with special attention to the molecular aspects of inheritance, mutation and gene control. Newer molecular, cellular and cytogenic approaches will be emphasized, with reference, whenever possible, to human gene systems and inherited disease. The course will discuss the endocrine events of puberty, the hormonal basis of human sexuality, and the control of gametogenesis. Early human development and the morphogenesis of selected organ systems are presented in lectures; other organ systems are developed in tutorials, conferences and videotapes or movies. Major concepts of experimental embryology are introduced to assist the student in learning to think about developmental mechanisms.

Administrative Course Director: Dr. Leder.
Offered: February-March of Year I.
Format: lecture, tutorial, clinics, conferences.
Evaluation: written examination and classroom performance.

*Reprinted from the Harvard Medical School Catalog, 1988-1989.

Identity, Microbes and Defense*

Students will be expected to learn the basic principles of immunology and general pathology, as well as gain an understanding of the principles of microbial structure, metabolism, pathogenicity, and replication. The course emphasizes concepts basic to understanding the immune system of the body. Basic concepts of pathology will be explored, including injury, inflammation, hemostasis, atherosclerosis, and neoplasia. The structure and function of microbes will be learned by examining classes of typical organisms as they cause their related disease; microbial genetics, reproduction, and metabolism will be studied as well as basic microbiologic techniques. Tutorials and laboratories will emphasize problem solving skills, integration of knowledge, and independent learning.

Course Director: Dr. Colvin.
Offered: April-June of Year I.
Format: lecture, conferences, laboratories, tutorials.
Evaluation: written examinations and classroom performance.

Principles of Pharmacology*

This course provides an introduction to pharmacology, emphasizing basic mechanisms of drug action and principles of drug-receptor interactions, pharmacokinetics, and drug metabolism. Drug classes are illustrated using prototypic drugs, focusing on mechanisms of drug action rather than on small differences between similar agents. Examples are drawn from autonomic nervous system, cardiovascular, and central nervous system pharmacology; autacoids and chemotherapeutic agents are also considered. Principles are developed that should allow students to evaluate both drugs currently used in the clinic and those under development in pharmaceutical houses. Relationships between basic mechanisms and clinical uses of therapeutic agents are explored in small-group conferences and care-based tutorials.

Course Director: Dr. Golan.
Offered: February of Year I.
Format: lecture, conference, tutorial.
Evaluation: written examination and participation in conferences and tutorials.

Human Nervous System and Behavior*

This course provides an introduction to the nervous system and human behavior. One of the aims of the course is to enhance, where possible, integration of the various ways in which the functions and malfunctions of the nervous system are studied: anatomy, physiology, pharmacology, pathology, psychology, neurology, psychiatry. One clinical case per week will introduce a wide range of issues and provide the context for their study. Among the topics are the following: the general organization of the brain and spinal cord, and the localization of function; nerve impulse conduction; synaptic transmission; depression; addiction; personality structure; panic and anxiety; control of movement; sensory systems; psychosis; neuronal death and degeneration; cognitive function; control of excitability in neuronal circuits. Independent study of topics identified as central learning issues in the clinical cases, after discussion in tutorial, will be a major activity. The lectures will help students organize complex bodies of material, will provide up-to-date information not readily available in textbooks, and will help consolidate material already studied. The laboratories will provide access to fixed tissues, to radiological and scanning techniques, and to methods of electrical stimulation and recording; pathological specimens will be studied in the context of minicases.

Course Director: Dr. Furshpan.
Offered: September-November of Year II.
Format: lecture, laboratory, tutorial.
Evaluation: classroom performance and two examinations.

Human Systems*

Pathophysiology is taught as a series of 10 short courses starting in November of Year II. The individual course descriptions are detailed below.

Cardiovascular Pathophysiology*

To prepare students to start clinical cardiology, the course will present the pathophysiology, pathology and pathologic radiology of the circulatory system. Pathophysiologic teachings will build upon principles of circulatory physiology already studied. Lectures, laboratories and outside reading will allow students to gain an understanding of diseases of the circulatory system in both adult and pediatric populations.

Course Director: Drs. Marsh and Benson.
Offered: November-December of Year II.
Format: lectures, conferences, laboratories.
Evaluation: written examination.

Gastrointestinal Pathophysiology*

The course presents a systematic survey of human diseases of the esophagus, stomach, small and large intestines, pancreas, biliary tract and liver. It is designed to provide students with basic knowledge of diseases of the human digestive system in preparation for clinical or other advanced study. Emphasis will be on etiology, pathogenesis, structural and functional alteration and methods of clinical diagnosis of the various diseases.

Course Director: Drs. Bynum and Chopra.
Offered: March of Year II.
Format: lecture, conferences, laboratory.
Evaluation: written examination.

Hematology*

The course is an intensive survey of the biology, physiology and pathophysiology of the blood and the blood-forming organs, with consideration of hematopoiesis, the formed elements of the blood, blood coagulation, blood groups, and immuno-globulins. The course is designed to foster a working knowledge of hematology and provide a basic approach to the key clinical problems in this field. It consists of didactic and informal discussions, analysis of clinical problems and review of the status of current research in hematology. Attention is also given to peripheral blood and bone marrow morphology and to basic clinical laboratory techniques.

Course Director: Drs. Bunn and Kaye.
Offered: January-March of Year II.
Format: lectures, conferences, laboratories.
Evaluation: written examination.

Renal Pathophysiology*

The course is designed to develop students' understanding of the pathogenesis, morphology and functional consequences of major diseases that affect the kidney, as well as the origins and consequences of disordered regulation of major ionic constituents of body fluids. The course will consider the mechanisms and morphology of diseases which primarily affect the glomeruli and renal tubules, vasculature and interstitium. Acid-base disorders, abnormal regulation of sodium, potassium and water, and the consequences of failure of renal excretory function will be covered and, where possible, related to morphologic abnormalities within the kidney.

Course Director: Drs. Rose and Coggins.
Offered: January-March of Year II.
Format: lecture, laboratory.
Evaluation: written examination.

Pathophysiology of Reproductive Medicine*

The course presents an overview of the male and female physiology, pathophysiology and endocrinology which are the basis for clinical reproductive medicine. Instruction is based on a syllabus supplemented by lectures and case-discussion sections. Selected topics include menopause, contraception, normal and abnormal pregnancy states, common disorders in male reproductive functioning.

Course Director: Dr. Ravnikar.
Offered: January of Year II.
Format: lecture, case discussions, pathology demonstrations.
Evaluation: written examination.

Respiratory Pathophysiology*

The course provides students with an understanding of respiratory disease based on underlying changes in structure and function and related to pathogenesis. A systematic survey of these alterations and the ways in which they become manifest at the clinical level will be presented. While the respiratory function of lung is the main aspect covered, non-respiratory or metabolic function is also considered. Extensive use will be made of patient-oriented exercises, some of which will take place in a hospital setting.

Course Director: Drs. Reid and Fanta.
Offered: November-December of Year II.
Format: lecture, conferences, laboratory.
Evaluation: written examination.

Pathophysiology of Infectious Disease*

This course will build on the microbes, identity and defense course given for first year students in the second semester. Medically important microbial agents will be stressed, working to understand pathogenic mechanisms of infectious disease and to explore pathophysiologic processes in various organ systems. The lectures will focus on general concepts and many will be included as handouts only, with brief reading supplements. The laboratory-conferences will be oriented around a series of short cases with specific organ system focus, and exemplifying the usual infections caused by a selection of viral, bacterial, parasitic and fungal pathogens. Ecologic, epidemiologic, pathologic and immunologic issues will be considered. Approximately two-thirds of the classroom experience will consist of clinical-pathologic-bacteriologic (CPB) conferences, laboratory demonstrations and small group projects and discussions, led by clinical and laboratory oriented instructors.

Course Director: Dr. Weinberg.
Offered: March-April of Year II.
Format: lecture, laboratory, clinic.
Evaluation: written and laboratory examinations.

Pathophysiology of the Skin*

The course will review the structure and function of the skin and introduce students to gross and microscopic pathology. The pathophysiology of skin will include disorders of keratinization, blister formation, abnormalities of pigmentation, immunologic diseases, alterations in the dermis and panniculus, photobiology and photomedicine, and cutaneous malignancies. There will be seven didactic sessions for which the students will be divided into small groups each led by two faculty members. Clinical and histopathological slides will be used to illustrate the important aspects of the pathophysiology of selected diseases. Appropriate visual materials will be used to introduce students to examination of the skin and recognition of the more common cutaneous lesions. The course will prepare students for the clinical electives offered by the department or provide a basic background for those not planning such a curriculum.

Course Director: Dr. Rhodes.
Offered: May of Year II.
Format: lecture, seminars.
Evaluation: written examination.

Musculoskeletal System*

The course is organized to give students an adequate background in the skeletal system, rheumatology, and calcium metabolism, which will enable them to start their clinical program in medicine, orthopaedics and pediatrics. The course will present the pathophysiology of the skeletal and muscular systems and of hormonal control.

Course directors: Drs. Nussbaum and Robb-Nicholson.
Offered: April-May of Year II.
Format: lectures and conferences.
Evaluation: written examination.

Pathophysiology of the Endocrine System*

The course will involve a thorough review of the physiological fundamentals of endocrinology and metabolism, followed by lectures, clinics and section work concerned with the clinical approach to problems in these areas. Mechanisms of hormone action and pathophysiological mechanisms involved in disorders of the pituitary, thyroid, adrenal glands and pancreas will be given major emphasis. These subjects will be integrated with materials presented in other pathophysiology blocks, specifically with reproduction. The aim of the course will be to provide a firm basis for the approach to clinical problems of endocrinology and metabolism. Subjects covered in earlier courses will be reviewed, as will methods of testing functions of endocrine organs. Major pathological disorders will be discussed from the standpoints of the clinician, pathologist and pharmacologist.

Course Director: Dr. Arky.
Offered: January of Year II.
Format: lectures, conferences, laboratories.
Evaluation: written examination.

Interdepartmental*

Patient/Doctor*

The course is designed around a series of clinical experiences in which the student learns first-hand from patients about the impact of illness on their lives and what they expect from their physicians and dentists. Working closely with a faculty preceptor and a small group, students learn the fundamentals of patient interviewing. Clinical sessions alternate with case based tutorials which highlight critical clinical issues, conflicts of perspective between patients' and doctors' values, and the impact of broader social factors on the care of patients. Readings from the social and behavioral sciences, the clinical literature and the medical humanities serve to broaden student understanding of the attitudes, beliefs and expectations which patients and doctors alike bring to the clinical encounter.

Course Director: Dr. Seldin
Offered: September-June of Year I.
Format: tutorial, clinical experiences, readings and group discussions.
Evaluation: oral presentations, case write-ups and classroom performance.

Introduction to Clinical Medicine (ICM)*

Introduction to Clinical Medicine (ICM), the externship continuation of the Patient/Doctor course, is taken with medical students at one of the Harvard-affiliated teaching hospitals. This course/externship introduces the student to the art of interacting with patients and establishing the close relationships necessary to achieve effective diagnosis and treatment. It also provides instruction in the basic techniques of interviewing and examining patients as well as the methodology of problem solving; how and when to use particular skills and how to adapt techniques of problem solving to specific clinical problems. Information about individual diseases is inevitably accumulated as the course proceeds.

Course Director: Dr. Mills.
Offered: Year II.
Format: externship.
Evaluation: a monitored history-taking and physical examination experience.

Dental Care Administration

Chester W. Douglass, D.M.D., Ph.D.
Professor of Dental Care Administration
Department Head

Department Description

The Department of Dental Care Administration conducts programs at both the pre- and postdoctoral level. Courses offered include the content areas of dental epidemiology, community dentistry, behavioral sciences, biostatistics and research methods, health policy and administration, geriatric dentistry, and professional ethics. The department supervises extramural rotations for fourth year students and is also responsible for the Health Care Research tracks at the pre- and postdoctoral levels. The Department's teaching program includes seminars in health care research methods which enable fifth year dental students to develop protocols of a research project that will meet their predoctoral thesis requirements.

Members of the Department are involved in the New England Consortium of Oral Epidemiology which is conducting cross sectional and longitudinal studies of distribution and high risk factors associated with oral disease in various subpopulations in the New England region. Other studies being conducted by this department include a national sample survey of dental practices investigating economies of scale in solo and group practice. A research program of technology assessment and the diffusion of preventive dentistry methods currently includes studies of periodontal treatment, dental radiographs and various oral and surgery procedures. Also being conducted are studies of preventive dentistry decision analysis. The department is currently increasing its commitment and activity in the field of international dental care programs.

The postdoctoral programs of the Department of Dental Care Administration include fellowship training programs in Health Services Research, Oral Epidemiology, and Geriatric Dentistry. Each of these fellowship programs can lead to specialty certification in Dental Public Health when combined with the postdoctoral residency in Dental Public Health leading to board eligibility which is offered with courses taken in this department and at the Harvard School of Public Health.

Courses

Patient/Doctor III

This course will give students an improved understanding of factors affecting patient and provider behavior. Students will also obtain a working knowledge of the dental care delivery system within which these behaviors exist and an understanding of the trends affecting the delivery of dental health services in the United States.

Course Director: Dr. Douglass.
Offered: spring of Year III.
Format: tutorial.
Evaluation: class participation, midterm and final exam.

Biostatistics

This course is an introduction to biostatistics and research methods which uses a self-instructional text to present many of the fundamental concepts in data analysis. Class time is devoted primarily to discussion of published dental research papers and to the students' own ongoing research, emphasizing the statistical methods used and their appropriateness. This format provides experience in critically evaluating the work of others as well as in improving the analytical methods applied in individual research.

Course Director: Dr. Berkey.
Offered: spring of Year III.
Format: seminar.
Evaluation: graded homework papers, presentation, final examination.

Endodontics

Joel L. Dunsky, D.D.S.
Department Head

Department Description

The predoctoral program has as its objective the teaching of the theory, biological basis, and practice of endodontics. The course is designed to present the student with the knowledge and skills to examine, diagnose, and successfully treat pulpally involved or potentially involved teeth in order to maintain an intact dentition. An important aspect of the course is the integration of endodontic therapy within the total plan of patient care. Emphasis is on the preventive aspects of endodontics, as well as definitive treatment modalities. Teaching is through lectures, demonstrations, technique laboratories, and individual chair-side instruction.

Courses

Endodontics

The purpose of the course is to guide the student in developing an understanding of and appreciation for the etiological factors of pulp and periapical disease. In addition, the student will be exposed to a variety of treatment modalities that may be appropriate for the problems they will face in clinical practice.

Skills are developed in the examination, diagnosis, and treatment of pulpally involved and potentially involved teeth. Emphasis is placed on the preventive aspects of endodontics as well as definitive therapy by non-surgical and surgical means. The integration of endodontics into the total plan of treatment for the patient is stressed throughout the course.

Course Director: Dr. Dunsky.
Offered: spring of Year II, Year III, Year IV.
Format: lecture, laboratory, demonstrations, treatment conferences, audio-visual presentations, supervised clinical practice.
Evaluation: written examination, laboratory projects, clinical evaluation.

Implant Dentistry

Leonard B. Shulman, D.M.D.
Division Head

Division Description

The Implant Dentistry Division, located within the School of Dental Medicine, offers a three year advanced education postdoctoral program in implant dentistry, implant rotations for both predoctoral and postdoctoral students, and a continuing education program in implant dentistry, as well as maintaining an implant dentistry and special care for advanced dental disease clinic. The department's facilities include an outpatient surgical suite, three implant prosthodontic operatories, a diagnostic operatory with full radiologic capabilities, and a full service implant technical laboratory.

For predoctoral students, the department offers courses introducing the student to the field of implant dentistry and the treatment of a noncomplex case. Included in these courses, students can participate in a two-month rotation through the department in the spring of their fourth year.

Courses

Implant Dentistry

New concepts and techniques have made implants an integral part of modern dentistry. This course provides an introduction to the field of implant dentistry and familiarizes students with historical perspectives, basic biology, and current concepts and techniques in the field.

Course Director: Dr. Weber.
Offered: spring of Year III.
Format: lecture.
Evaluation: examination.

Implant Dentistry in the Clinical Setting

For the first month of this elective rotation, the student spends one week observing all aspects of implant treatment and one week assisting in implant dentistry. At the end of the second week, the student is assigned a totally edentulous patient and, during the next two weeks, completes diagnosis, treatment planning and implant insertion. Four months later, the student returns to perform second stage surgical abutment connection. During the final three weeks, s/he completes the restorative phase of treatment, follow-up and maintenance.

Course Director: Dr. Weber.
Offered: spring of Year IV.
Format: clinical rotation.
Prerequisite: Implant Dentistry.
Evaluation: case presentation.

Operative Dentistry

I. Leon Dogon, L.D.S., R.C.S., D.M.D.
Professor of Operative Dentistry
Department Head

Department Description

The Department of Operative Dentistry is responsible for teaching Dental Anatomy, Preclinical Operative Dentistry, Oral Hygiene, Clinical and Advanced Clinical Operative Dentistry, Dental Materials, and aspects of Preventive Dentistry to predoctoral students. Instruction is given by means of lectures, discussions, seminars, and individual chair-side instruction. Audio-visual aids, including closed circuit television, are used extensively. Throughout the course in Operative Dentistry, emphasis is placed on early student-patient contact with immediate clinical application of treatment procedures. The student develops proficiency in examination, diagnosis, and treatment planning, as well as in treatment procedures. Current concepts of cavity preparation and restorative techniques are taught using conventional and high-speed cutting instruments. Advanced operative procedures, including multiple-surface cast gold and tooth-colored restorations are also taught. Instruction in Operative Dentistry is provided throughout the Major Clinical Period continuing through the Externship Rotation and Comprehensive Care Clinic in the fourth year.

The Department of Operative Dentistry at Harvard School of Dental Medicine is extensively involved in research activity. The three full-time members based at the School spend a portion of their time participating in both clinical and laboratory research. Investigations on the biological response to new restorative materials and materials with potential for dental use are in progress. New formulations of tooth-colored materials for use in posterior segments of the oral cavity are also under investigation. These involve laboratory and animal studies, as well as human clinical evaluations.

In addition, the Department Head is project director for a number of preventive dentistry projects in both Shanghai and Chengdu, China. In Shanghai, studies on the effectiveness of various preventive modalities delivered to children in 24 primary schools, (two in each district of the city), are underway. The programs are being accomplished in a joint effort involving Harvard School of Dental Medicine (HSDM), Shanghai Second Medical University and Project Hope. The programs in the public kindergarten, primary and secondary schools in Chengdu are a collaborative effort between HSDM, West China University of Medical Sciences and Project Hope. The objectives of these programs is to train paraprofessional personnel in a network of programs as a model for preventive dentistry in China and other developing countries. Senior dental students (5th year) have the opportunity of spending three to five months participating in this program.

Courses

Dental Anatomy

Dental Anatomy is the study of the structure of the teeth and their correlated parts. Students learn tooth function, identification, and relationships between form and function, and gain an understanding of species difference and difference in diet in tooth development. Abnormal tooth anatomy and anatomical structures are examined in extracted teeth, slides and live patients. Students learn to take into account the normal anatomy and variations necessary for planning restorations, utilizing motor skills derived from technical training, and applying them to more complicated procedures such as carving amalgams and carving wax patterns for inlays and crowns.

Course Director: Dr. Dogon.
Offered: fall of Year II.
Format: lecture, laboratory.
Evaluation: examination and laboratory work.

Operative Dentistry

Operative Dentistry is given throughout the Major Clinical Dentistry Period (Year III). In this course, emphasis is placed on early student/patient contact with immediate clinical application of treatment procedures. Instruction is given in the clinical aspects of caries and other dental diseases. By way of lectures, demonstrations, and individual instruction, the student develops proficiency in examination, diagnosis and treatment planning and treatment procedures; the current techniques of cavity preparation utilizing conventional and high speed instrumentation are given. In conjunction with these techniques, a study on the various types of dental materials used in restorative dentistry is given. Advanced Operative procedures including multiple surface gold inlay/onlay restorations are then taught along with some recently developed clinical procedures. In addition, the students are instructed in communicative skills relative to student/patient interaction as well as student/staff interaction. Practice in all phases of Operative Dentistry continues throughout the Major Clinical Dentistry Period, Externship Rotation and during the Elective Period.

Course Director: Dr. Dogon.
Offered: Year III.
Format: lecture, clinic, demonstration.
Evaluation: chairside evaluation and examinations.

Advanced Operative Dentistry Externship

This course is given as a required one-month rotation during the externship period in the first semester of Year IV. Two students rotate at each time and are under the supervision of one instructor. The students are provided with a Dental Auxiliary trained in four-handed dentistry and undertake advanced restorative procedures including 3/4 and 7/8 cast gold crowns, porcelain fused to gold restorations, porcelain crowns and multiple inlays and onlays as well as other tooth colored restorations. Emphasis is placed on quality of restorative procedures.

Course Director: Dr. Norris.
Offered: one month of Year IV.
Format: clinic.
Evaluation: clinical performance.

Oral and Maxillofacial Surgery

R. Bruce Donoff, D.M.D., M.D.
Professor of Oral and Maxillofacial Surgery
Department Head

Department Description

Students begin oral surgical training in the School's oral surgical clinic during their second year. Clinic assignments continue during the third year, in addition to a 32-hour didactic course. The bulk of clinical training is gained in one-month clerkships in oral surgery at the Massachusetts General Hospital -a unique, live-in hospital experience. During the elective period, students may continue to work in the oral surgery clinic at the School; enroll in the Head and Neck Anatomy course (developed primarily for those wishing to specialize in oral surgery); or take an additional clerkship on the Massachusetts General Hospital Oral Surgery service, assuming increasing responsibility for pre-, intra-, and postoperative patient management.

Students are instructed in all aspects of patient care. They will become technically skilled in single and multiple extractions of erupted teeth, alveoplasty, apicoectomy, retrograde apical fillings, and extraction of tissue-impacted teeth, as well as becoming capable of managing the patient with acute odontogenic infection. Throughout the training, emphasis is placed on student's ability to perform those procedures which are appropriate to general practice and to recognize and refer those cases which are outside the purview of the general practitioner.

The department is responsible for residency training programs at the Massachusetts General Hospital. Two tracks are offered which are designed to fulfill the specialty requirements of the Clinical Board of Oral and Maxillofacial Surgery. Five and six year tracks combine oral and maxillofacial surgery, the M.D. degree and general surgery to provide optimal training and education. The clinical program is primarily at the Massachusetts General Hospital and includes rotations at the Brigham and Women's Hospital and the Children's Hospital Medical Center.

Research activities include studies in diphenylhydantoin and craniofacial malformations, wound healing, bone grafting and bone healing.

Courses

M.G.H. Case Presentations

Students are randomly assigned cases to evaluate and discuss before classmates, faculty moderators, and the course director. The clinical cases selected for this course are illustrative of numerous common and some uncommon medical conditions that may complicate the delivery of dental care. The course setting provides an opportunity to review the various medical management and diagnostic dilemmas that will occur during typical clinical careers.

Course Director: Dr. Seldin.
Offered: fall of Year III.
Format: lecture/discussion.
Evaluation: oral presentation and preparation of handouts.

Oral & Maxillofacial Surgery

All aspects of Oral and Maxillofacial Surgery are covered. The course begins with lectures on the basic principles of Oral Surgery, removal of teeth and suturing techniques as well as discussions on oral and facial pain and odontogenic infections and appropriate management strategies. The majority of the lectures take specific surgical conditions and describe their etiology, management and indications for surgical intervention (e.g., head and neck tumors, salivary gland disease, implants, facial fractures and deformities, temporomandibular joint disorders and preprosthetic surgery). Other lectures are devoted to the interpretation of surgical radiographs and pediatric oral surgery.

Course Director: Dr. Keith.
Offered: February-June of Year III.
Format: lecture.
Evaluation: oral presentation.

Oral and Maxillofacial Surgery Externship

During the intensive Oral Surgery Externship at the Massachusetts General Hospital, each student is fully integrated into the life of the department. The student attends 7:00 AM rounds, observes or assists in actual oral and maxillofacial surgery cases, interviews and treats patients in the Out-Patient Unit under staff supervision, and teams up with the resident on call for specific night and weekend assignments.

The student also attends the Orthognathic Conference and Tumor Clinic and has the opportunity to observe in the Chronic Facial Pain Clinic and Temporomandibular Joint Disorders Clinic on a weekly basis. There are opportunities to observe the use of general anesthetic agents as well as intravenous and inhalation sedation agents in different clinical settings. By the end of the month the student has acquired an intimate view of the actual practice of Oral and Maxillofacial Surgery in a teaching hospital and tertiary care referral center and can determine his/her own interest in the discipline as a possible future specialization. Members of the department also have an opportunity to judge the clinical aptitude of the student as a potential resident in Oral and Maxillofacial Surgery.

Course Director: Dr. Seldin.
Offered: one month of Year IV.
Format: lectures, conferences, rounds.
Evaluation: paper and clinical performance.

Oral Biology

Paul M. Gallop, Ph.D., A.M.
Professor of Biological Chemistry
Department Head

Department Description

The Department of Oral Biology is responsible for the predoctoral course in Oral Biology, a 40-hour course covering the anatomy, physiology, biochemistry, and growth and development of oral tissues. In addition, the course includes pertinent information on oral microbiology and immunology with particular reference to dental caries and periodontal disease.

The department is also responsible for teaching four major didactic courses for the postdoctoral student in the following areas: Oral Microbiology, Immunology, Connective Tissue and Bone, and Clinical Pharmacology.

Research activities include: connective tissue; craniofacial development; aging cells; collagen and elastin; mineralized tissues; vitamin K; microbiology of dental caries and periodontal disease; saliva and salivary proteins; immunology of dental caries; melanogenesis and cell regulation.

Courses

Oral Biology

Oral Biology is a multidisciplinary course focused on four areas: 1) developmental biology and anatomy of the tooth and its supporting tissues, 2) craniofacial development and growth, 3) biology of the oral mucosa and salivary glands, and 4) microbiology and physiology of the oral cavity. Selected additional topics include: cell biology of tooth, bone, and periodontium; biochemistry of mineralized connective tissues; wound healing in hard and soft tissues; aging; nutrition and microbial ecology; biology of caries and periodontal disease; and oral immunology. While normal function is the primary concern, selected examples of abnormal development and pathology are introduced where relevant. Discussion of basic research concepts provides a framework for integration of new information into the didactic content of the course. Oral presentations based on independent reading of research articles are required.

Course Director: Dr. Hauschka.
Offered: November-May, Year I.
Format: lectures, labs, discussions.
Evaluation: histology slide examination, written midterm and final examinations, term paper, oral presentation.

Oral Diagnosis and Oral Radiology

Joseph L. Henry, D.D.S., Ph.D.
Professor of Oral Diagnosis and Oral Radiology Department Head

Department Description

The Department of Oral Diagnosis and Oral Radiology screens all patients in the pre- and postdoctoral clinics and monitors the assignment, progress, care, and recall of patients through the Patient Control Center. In the predoctoral curriculum the Department of Oral Diagnosis and Oral Radiology is responsible for the teaching and/or coordination of courses in Oral Diagnosis, Oral Radiology, Treatment Planning, Clinical Photography, and Student Case Presentations. Students develop their skills in diagnosis and radiological interpretations through rotations in the Oral Diagnosis and Radiology Clinics. The department jointly coordinates the Comprehensive Care Clinic during the Externship Period. In the clinic, total patient care is stressed, and emphasis is placed on management of time, planning, and appointment control.

The department coordinates the written Mock Licensure Boards and jointly coordinates the Oral Comprehensive Examinations. Clinical rotations and teaching opportunities for postdoctoral students are also offered by the department.

Members of the Oral Diagnosis and Radiology Department are involved in research on the social and economic impact of periodontal disease; radionuclide imaging and bone scanning; the recruitment, retention and graduation of minorities; radiation practices in North American dental schools; and experimental oral carcinogenesis. Special opportunities are available for prospective and retrospective studies involving records and the delivery of care.

Courses

Intraoral Photography

This course is designed to introduce the student to the use of a 35mm camera for documentation of patient care. A lecture covering the basics of photography and its application to dentistry is presented. The use of mirrors and retractors is discussed and demonstrated. A laboratory period is used to demonstrate intraoral and extraoral photography and calibration of cameras. During a clinical session, students take pictures of each other and subsequently review results of their calibrations and discuss sources of error. Following the calibration exercise, each student is required to submit a set of intraoral and extraoral slides.

Course Director: Dr. Friedman.
Format: lecture, laboratory.
Evaluation: clinical photography assignment.

Radiology

Dental Radiology is organized as a series of lectures, demonstrations and slide presentations and is aimed at introducing students to the subject's many facets. At the completion of the course, students are expected to know the basic principles of the physics of x-rays; the techniques for taking, developing and mounting x-ray films; and a basic knowledge of the dangers of ionizing radiation. In addition, students are taught to read x-rays of the common abnormalities they will contend with during their professional lives. Considerable emphasis on the reading of films is done with slides.

Course Director: Dr. Valachovic.
Offered: summer of Year I.
Format: lectures, laboratory.
Evaluation: written examination.

Radiology Rotations

Students are assigned to the Radiology Clinic to prescreen patients and prescribe, take, develop, and mount x-rays of new patients; and to prepare and defend radiologic reports on patients seen. This is done under the close scrutiny and supervision of the faculty and staff assigned to the Radiology Clinic.

Course Director: Dr. Henry.
Offered: Year III.
Format: clinical rotations.
Evaluation: clinical evaluation.

Oral Diagnosis Rotations

Students are assigned to the Oral Diagnosis Clinic to examine, screen and triage patients under the close supervision of the faculty on a one-to-one basis. Additionally, the student uses all of the data (history, x-rays, radiological reports, oral and laboratory findings, etc.) to develop a treatment plan best suited for and acceptable to the patient. The patient is consulted and counseled about the nature and cost of the treatment plan and assisted in making a decision.

The principal objectives of this rotation are to develop and sharpen the students' diagnostic and treatment planning skills, and to develop ability, style, professionalism, confidence, efficiency and effectiveness in communicating with and gaining the confidence of patients. This is expected to culminate in the patient choosing a suitable treatment plan and a patient who is satisfied that the student is committed to serving the best interests of the patient, while rendering the best care possible and maintaining the highest ethical and professional standards.

Course Director: Dr. Henry.
Offered: February-July of Year III.
Format: clinical rotations.
Evaluation: clinical evaluation.

Treatment Planning for the Adult Patient

The objectives of this course are to instill in the student a philosophy of comprehensive treatment planning for the problems of the adult dentition; to develop a pattern of logical thought processes that will allow alternative treatment plans to be developed for difficult cases; to develop a concept of the interrelationship between the various specialties in dentistry; and to develop a thought process that supercedes a step-by-step outline for procedure and allows a creativity of thought in treatment planning. Students are encouraged to bring models, photographs, x-rays and other records of cases that they have been assigned in the clinic if the case is presenting difficulty in developing a satisfactory comprehensive treatment plan.

Course Director: Dr. Friedman.
Offered: fall and spring semester of Year III.
Format: lectures and case studies.
Evaluation: written examination.

MCD Case Presentations

The purpose of this course is to provide the student with an in-depth experience in selecting, documenting, treating (as far as possible) and preparing a suitable case using specified guidelines for presentation to classmates and faculty representatives from all clinical departments. The student is expected to prepare a comprehensive, typed and charted handout for the intended audience. After presenting the case - including slides, x-rays, study models, and handouts - the student is expected to respond to all questions by the faculty and students and to defend the ideal and alternative treatment plans which s/he has presented.

The objectives of the course are the following: to provide a forum for sharing the learning experiences of the clinic and to discuss problems encountered in treatment planning and treatment; and to give the student additional experience in case presentations with emphasis on the comprehensive examination, history, diagnosis and ideal and alternative treatment planning.

Course Director: Dr. Henry.
Offered: spring semester of Year III.
Format: oral case presentations by students.
Evaluation: oral presentation; handouts; study models; slides; treatment plans; responses to questions.

Comprehensive Care Clinic

The Comprehensive Care Clinic course is designed to provide a continued experience for students to practice comprehensive longitudinal care for their patients. Students are expected to improve their management of time and their confidence in handling more complicated clinical problems.

Course Director: Dr. Henry.
Offered: September-May of Year IV.
Format: Two half-day clinic sessions per week.
Evaluation: clinical performance.

Externship Case Presentations

The Externship Case Presentation course is similar to the MCD Case Presentations course presented during the second semester of the third year of the curriculum. Since the student has gained clinical experience, these cases are expected to be more complex, and to include treatment rendered. The primary purposes of this course are the following: to provide a forum for sharing the learning experiences of the externs at different institutions; to give the students additional experience in case presentation with emphasis on comprehensive examination, history taking, diagnosis, treatment planning and therapy for patients with oral manifestations of disease; and to allow all students to benefit from faculty and peer review and critique of their presentations and experiences.

Course Director: Dr. Henry.
Offered: Year IV.
Format: oral case presentations by students.
Evaluation: oral presentation; handouts; study models; slides; treatment plans; responses to questions.

Oral Comprehensive Examinations

Each student is required to take and pass three oral comprehensive examinations on cases selected and worked up by the faculty. There are two examinations in the third year and one in the fourth year prior to taking the NERB examinations.

The objectives of these examinations are to evaluate the students' comprehensive understanding of total patient care; to provide a learning experience for each student so that s/he may gain confidence in comprehensive patient management; to provide a forum in which students may present in oral form the case history; the clinical findings and treatment planning before a critical audience; to evaluate the breadth and depth of each student's dental knowledge and determine if deficiencies exist and to initiate remedial action, if needed. Each student is provided with the case history, models, Kodachrome slides, x-rays and dental examination charts which s/he is allowed to study for one and one-half hours and from which s/he must derive a diagnosis and treatment plan. Immediately following the preparation period, each student reports to an examination team for a one hour examination period in which s/he presents the findings and responds to questions.

Course Director: Dr. Fox.
Offered: Year III and Year IV.
Format: 3 two-hour examinations.
Evaluation: oral presentation; responses to questions.

Oral Medicine and Oral Pathology

Gerald Shklar, D.D.S., M.S.
Charles A. Brackett Professor of Oral Pathology
Department Head

Department Description

The objectives of the predoctoral courses in Oral Medicine and Oral Pathology are to give the student a comprehensive knowledge of the pathology and management of oral diseases, skills in histologic interpretation, and an appreciation of research methodology. Predoctoral teaching consists of : 1) a course of lectures, seminars, and laboratory sessions in oral pathology for first-year students, presenting the clinical, radiographic, and microscopic features of diseases of the teeth, mouth, jaws, and salivary glands; 2) a course of lectures in oral medicine-oral oncology given to third-year students, presenting the diagnosis, therapy, and management of oral diseases and the oral manifestations of systemic disease (particular emphasis is placed on the management of oral cancer and presentations are given in surgery, radiation therapy, chemotherapy, reconstructive surgery, and maxillofacial prosthesis); 3) an elective course in oral histopathology with emphasis on diagnostic and surgical oral pathology; 4) an elective course in experimental oral pathology in which the student undertakes a research project that will be carried out and presented as a research paper.

Three- and four-year postdoctoral programs in oral pathology - designed to meet the oral pathology specialty board requirements - are available for qualified applicants.

Research activities of department members include: experimental carcinogenesis of oral mucosa and of salivary glands, dealing with immunologic aspects, histochemical and ultrastructural features, and effect of systemic influences on development and growth of tumors; histopathology of oral mucous membrane diseases; effect of systemic influences on oral wound healing; effect of systemic influences on development of periodontal disease; and molecular biology of oral cancer development.

Courses

Oral Pathology

The Oral Pathology course offers lectures, clinical-pathologic case discussions presenting the clinical, radiographic, and microscopic features of diseases of the teeth, mouth, jaws, and salivary glands. Recent and current research findings are integrated into the lecture presentations where relevant.

Course Director: Dr. Gallagher.
Offered: June and July of Year I.
Format: lectures, case discussions.
Evaluation: examinations.

Oral Medicine/Oral Oncology

This course of lectures in oral medicine/oral oncology is given to third-year students, presenting the diagnosis, therapy, and management of oral diseases and the oral manifestations of systemic disease. Particular emphasis is placed on the management of oral cancer and presentations are given in surgery, radiation therapy, chemotherapy, reconstructive surgery, and maxillofacial prosthesis.

Course Director: Dr. Shklar.
Offered: Year III.
Format: lecture.
Evaluation: written examination.

Orthodontics

Carla A. Evans, D.D.S., D.M.Sc.
Associate Professor of Orthodontics
Acting Department Head

Department Description

The overall objective of the predoctoral course in Orthodontics is to develop sound judgment as a basis for diagnosis and treatment planning and to provide some experience in the treatment of uncomplicated malocclusions in clinical practice.

During the first phase of the program, lectures and laboratory sessions, as well as clinical rounds, are scheduled for the teaching of occlusion, classification of malocclusion, dento-facial growth and cephalometrics.

The second phase of the program is concerned with biomechanical principles of tooth movement and correction of malaligned teeth during a one-week (20 hours) typodont course.

The third phase consists of clinical examination and history taking of a patient, followed by a one-week (20 hours) period for preparation and analysis of clinical records. Moreover, diagnosis and treatment planning are discussed during clinical conferences presented by the students. Subsequently, the treatment plan is discussed with the patient, appliances are constructed, and active treatment is initiated.

During the fourth phase of the program, additional patients are assigned for diagnosis and treatment. Lectures are given throughout the 14 months, during which predoctoral students are taught by the Department of Orthodontics. An extensive course syllabus is provided, which contains material including and also extending beyond the contents of the lectures.

Orthodontic treatment of patients assigned to predoctoral students is continued in the Comprehensive Care Clinic conducted weekly during the fourth year in conjunction with the other clinical departments.

Courses

Orthodontics

The predoctoral course in Orthodontics provides information on the broad spectrum of orthodontic patient care and seeks to provide a basic understanding of the principles of decision-making in patient care that will assist the generalist to collaborate with specialists in orthodontics, periodontics, prosthetics, and maxillofacial surgery for treatment of their patients.

Course Director: Dr. Evans.
Offered: June and July of Year II and throughout Year III.
Format: lectures, seminars, clinic, laboratory.
Evaluation: written examinations, seminar questioning, presentation of diagnosis and treatment plan of patients.

Pain Control Unit

Joseph J. Frassica, D.D.S., M.D.
Clinical Instructor in Dentistry
Director of Dental Anesthesia

Department Description

The Pain Control Unit is responsible for the predoctoral and postdoctoral teaching of pain and anxiety management, anaesthesiology, clinical pharmacology and emergency medicine. Teaching is provided to predoctoral students throughout the curriculum. The unit is particularly concerned with coordinating basic didactic instruction with preclinical and clinical instruction. The relevance of the basic principles of biochemistry, pharmacology, microbiology and anatomy are illustrated and emphasized throughout the pain control teaching. Particular emphasis is given to the clinical pharmacology of local anaesthetics, sedatives and analgesics. Educational materials used by the unit include reprints, slides, demonstrations, video tapes and films. Chairside instruction is provided throughout the student's clinical years. The technical skills of patient management, local anaesthetic administration and nitrous oxide sedation are provided in detail. Proficiency in cardiopulmonary resuscitation is a requirement for all predoctoral students.

The unit provides instruction to the postdoctoral students in clinical pharmacology. The course expands the principles of pharmacokinetics and physiologic pharmacology as applied to dental therapeutics. Elective participation courses in N_2O/O_2 sedation and intravenous sedation are also provided to the postdoctoral students.

The Pain Control Unit is also responsible for teaching and updating students, faculty and staff in the management of emergencies within the institution. Short courses are provided at various levels of detail in cardiopulmonary resuscitation and emergency medicine.

Courses

Pain Control I

Pain Control I provides instruction in local anesthesia of the head and neck area, including review of the anatomy, pharmacology, and physiology of local anesthesia of this region. It trains students in the management of medical emergencies in the outpatient setting, including selected advanced life support techniques and certification in basic cardiac life support and teaches clinical pharmacology of narcotic and non-narcotic analgesics.

Course Director: Dr. Frassica.
Offered: summer of Year III.
Format: lecture, laboratory.
Evaluation: written examination.

Pain Control II

Pain Control II provides instruction in general anesthesia, nitrous oxide sedation, parenteral sedation, behavioral management techniques, and advanced medical emergency management.

Course Director: Dr. Frassica.
Offered: fall and winter of Year III.
Format: lecture, lab.
Evaluation: written examination.

Anesthesiology Clinical Elective

Students will gain clinical experience with airway management, endotracheal intubation, pharmacokinetics of inhalation anesthetics, clinical pharmacology of emergency drugs, as well as with the management of intraoperative anesthesia, preoperative evaluation and assessment of anesthetic risk, and postoperative patient management including the modalities of pain control.

Course Director: Dr. Frassica.
Format: lecture, laboratory.
Evaluation: written examination.

Pediatric Dentistry

Howard L. Needleman, D.M.D.
Associate Clinical Professor of Pediatric Dentistry
Co-Department Head

Stephen Shusterman, D.M.D.
Assistant Clinical Professor of Pediatric Dentistry
Co-Department Head

Department Description

The goal of the Department of Pediatric Dentistry in predoctoral education is to teach undergraduates the necessary diagnostic and clinical skills they need to provide basic preventive and restorative care for children. This includes exposure to ideas and training in the areas of growth and development, behavioral management, diagnosis and treatment planning, preventive measures, restorative procedures, pulp therapy, management of the developing occlusion, management of traumatized teeth, and care for hospitalized and exceptional children. The department is based at the Children's Hospital which allows both pre- and postdoctoral students to interact with medical professionals and to be exposed to a large variety of medical and surgical pediatric problems. Dental care on medically, emotionally and/or physically handicapped children is emphasized.

Research activities of the staff are varied. Currently, clinical studies are under way in the following areas: 1) prognosis of traumatized primary teeth, 2) oral biopsies of pediatric soft tissue lesions, 3) a retrospective study of emergency patients treated at Children's Hospital, 4) epidemiology of pediatric dental emergencies, 5) efficacy of light-cured sealants, 6) dental findings in patients with William Syndrome, 7) developmental enamel defects of primary teeth, 8) the dental management of cleft lip and palate patients, 9) effects on the dentition of Romberg's hemifacial atrophy, 10) oral findings in histiocytosis, 11) long-term dental sequelae in pediatric oncology patients, 12) dentist's reporting of child abuse and neglect.

Courses

Pediatric Dentistry

Pediatric dentistry is a clinical specialty which limits itself by age rather than clinical area. Because of the unique experience in treating the child and his or her family, this course has been developed to bridge the gaps between the theoretical material and its application in practice. Emphasis is placed on obtaining adequate medical/dental history, diagnostic information, and the development of a treatment plan. Students are guided through simple preventive and restorative visits while experiencing the challenges and rewards of managing childhood behavioral patterns.

Course Director: Dr. Needleman.
Offered: spring of Year III.
Format: lecture, laboratory, clinic.
Evaluation: written examinations, laboratory, and clinic.

Pediatric Dentistry Externship

The goal of the rotation is to give the student a broad hands-on experience in the delivery of dental care to children. The rotation is mainly a clinical experience in the Department of Dentistry at The Children's Hospital, Boston. During the one month rotation, the student has the opportunity to work along with postdoctoral students and senior staff in providing dental care to a wide range of pediatric patients. The program includes routine preventive and restorative care as well as specialized care such as the management of traumatic injuries, developing malocclusions and exceptional children. In addition, the student is exposed to the management of children with behavioral problems using various non-pharmacologic techniques and observes pharmacologic management techniques.

The student is required to fabricate commonly used appliances in the management of developing malocclusions, as well as prepare and present the case history and treatment plan of a patient with a complex medical/dental problem whom they have seen during the rotation.

Course Director: Dr. Needleman.
Offered: one month of Year IV.
Format: clinic, seminars.
Evaluation: clinical evaluation.

Periodontology

Ray C. Williams, D.M.D.
Associate Professor of Periodontology
Department Head

Department Description

The Department of Periodontology is actively engaged in the teaching, research and patient care that focuses on preventing and arresting the progress of periodontal disease. Teaching focuses on current concepts of the infective bacterial etiology, the immunologic and inflammatory pathogenesis and the surgical and preventive treatment of gingivitis and periodontitis. Research in the department is actively engaged with examining a role for host modulation in the treatment of the disease, in the role of biological response modifiers in building new periodontal tissues and in computerized diagnostic procedures. Patient care activities treat a large variety of patients with moderate and advanced disease at the dental school and affiliated hospitals.

Courses

Periodontics

The bacterial etiology and the pathologic mechanisms of gingivitis and periodontitis are presented in detail. Considerable attention is given to surgical therapy of periodontal disease. Surgery includes both plastic procedures with soft tissue manipulation as well as osseous surgery with resection, shaping, and augmentation of bone. Maintenance of patients after active periodontal therapy and methods of achieving occlusion following periodontal therapy are also included. Additionally, research advances in the prevention and treatment of periodontal disease are presented and their probable roles are candidly discussed.

Course Director: Dr. Howell.
Offered: July and June of Year III.
Format: lectures, laboratory, clinics.
Evaluation: written examinations, clinical performance.

Practice Management

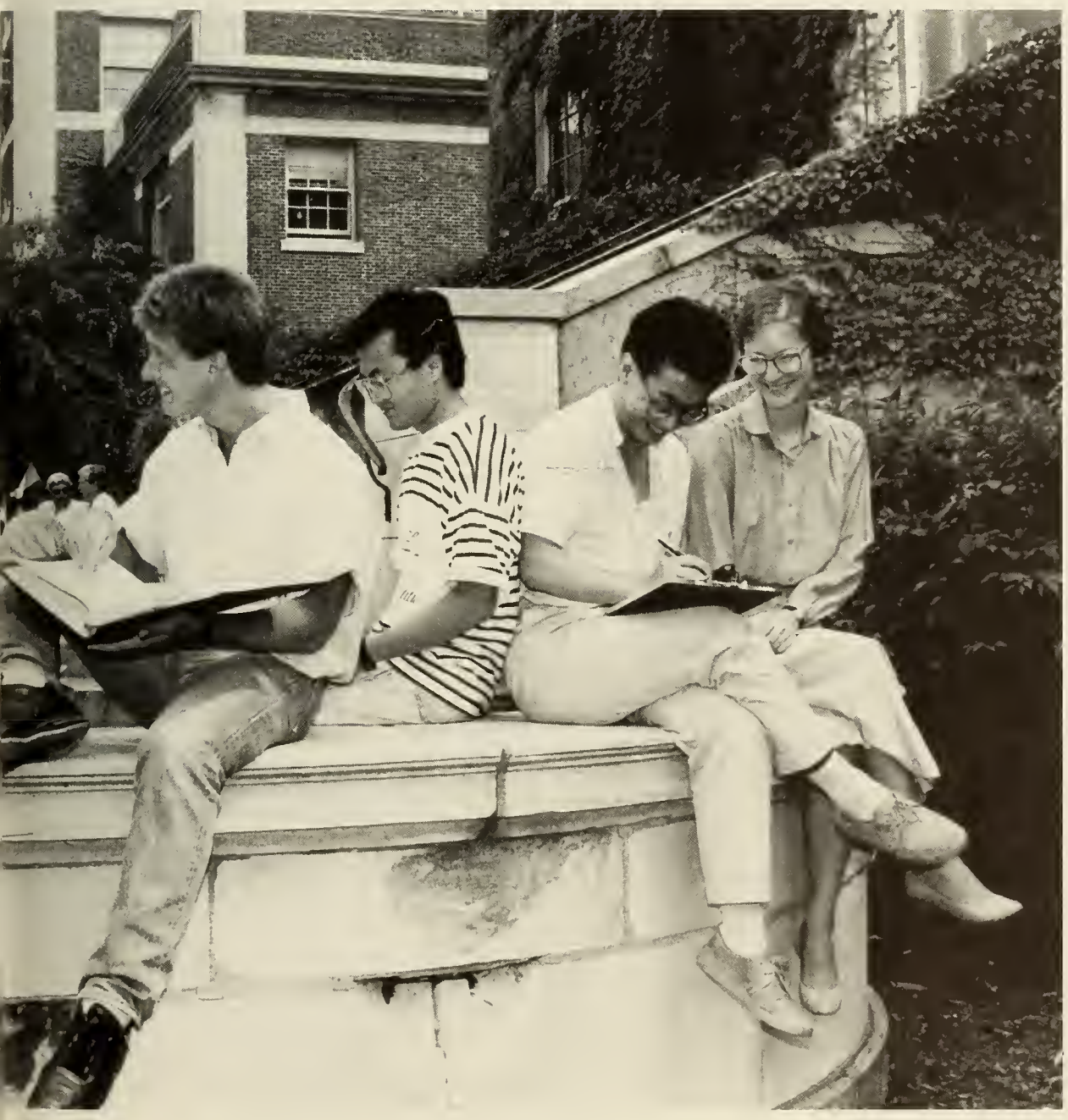
Richard W. Valachovic, D.M.D., M.P.H., M.S.
Director of Patient Care

Courses

Dental Practice Management

This course is intended to give students a firm foundation in the principles of dental practice management so that in the future they may continue with other programs and improve the delivery of their services to the public. Topics include: choosing a type of practice, selecting a location, buying a practice, dental office design, staffing, appointment control, recall systems, bookkeeping, payment plans and collections, dental insurance, marketing, patient records, and professional ethics.

Course Director: Dr. Valachovic.
Offered: fall of Year IV.
Format: lecture and discussion.



Predoctoral Research

Peter V. Hauschka, Ph.D.
Program Director

Courses

Year IV Research Paper

Under the guidance of a research sponsor, the student explores and develops interest in a relevant special field of either biomedical research or health care research. During Years I through III, the student learns how to read and evaluate the scientific literature, learns how to gather data and subject it to critical analysis, develops abilities in scientific and collegial communication, and strives to make a genuine contribution to the scientific literature. This culminates in the development and presentation of a research proposal in NIH format which is presented to the faculty in Year III and conducted during Year IV. A research paper and oral defense are to be completed by the end of Year IV.

Course Director: Dr. Hauschka.
Offered: Year IV.
Format: research.
Evaluation: written paper; oral presentation.

Year V Thesis

In Year V, the student continues his/her research in the biomedical or health care fields, choosing either a more extensive development of the same research subject pursued in the previous four years, or exploring a completely new topic of interest. Thesis mentors may be chosen from Medical Area Harvard faculty or from other appropriate institutions. A thesis is presented and defended before a faculty examination committee. Manuscript publication is discussed and encouraged.

Course director: Dr. Hauschka.
Evaluation: comprehensive written thesis, oral presentation, thesis defense.

Prosthetic Dentistry

Albert Kazis, D.M.D., M.P.H.
Associate Professor of Prosthetic Dentistry
Department Head

Department Description

Prosthodontics is the branch of dentistry pertaining to the restoration and maintenance of oral function, comfort and appearance, and health of the patient by the restoration of natural teeth and/or the replacement of missing teeth and contiguous oral and maxillofacial tissues with artificial substitutes.

The Department of Prosthetic Dentistry is responsible for teaching the didactic and supervising the clinical aspects of prosthetic dentistry. The Head of the Department serves to coordinate all aspects of the department. Course Directors are responsible for the specific programs of Fixed Prosthodontics, Occlusion, Complete Denture Prosthodontics, Removable Partial Denture Prosthodontics and Postdoctoral Prosthodontics. All programs are closely integrated with other departments in the school. The didactic materials and preclinical courses are presented to the students in the third year and clinical activities continue through the fourth and fifth years.

Courses

Occlusion

Occlusion has been defined as the contact relationship of teeth resulting from neuromuscular control of the masticatory system. Occlusion in the educational realm deals with the anatomical, physiological, and biomechanical relationships of the masticatory system and the restoration or reproduction of the occlusal relationship to function properly in this system.

The student must achieve a high level of understanding of the healthy functioning stomatognathic system and the acceptable contact relations of the teeth during the full range of mandibular movement as well as the normal functional movements. Also, an understanding of the instrumentation and techniques required to reproduce these relationships during restorative procedures should be achieved.

Course Director: Dr. Nishimura.
Offered: spring of Year II.
Format: lectures, laboratory.
Evaluation: laboratory work, written examination.

Complete Denture Prosthodontics

Complete denture prosthetics is a body of knowledge and skills pertaining to the restoration of the edentulous arch with a removable prosthesis. The preclinical course stresses the importance of a clinical examination and the diagnostic procedures required for an adequate treatment plan. Lectures and demonstrations are presented on impression techniques, maxillo-mandibular relationships, tooth selection, esthetic considerations, phonetics, denture materials, processing of dentures, conditioning of tissues, insertion and completion. Emphasis is constantly placed on the functional aspects of mastication.

Course Director: Dr. M. Ehrlich.
Offered: Year III. Format: lectures, laboratory, clinic.
Evaluation: preclinical laboratory performance, clinical performance, written exams.

Fixed Prosthodontics

The purpose of fixed prosthodontics is not only to restore a missing tooth or teeth but also to re-establish and maintain functions of the dental arches. The success of fixed prosthodontics depends on several factors: an adequate treatment plan formulated from an effective diagnosis; the necessary skills to perform indicated operative procedures; a cooperative and understanding patient, and the ability to systematically perform these procedures.

In order to accomplish these goals emphasis is placed on the following factors: diagnosis, treatment planning, tooth preparation procedures, laboratory techniques, occlusal relationships, finish and cementation of the restorations.

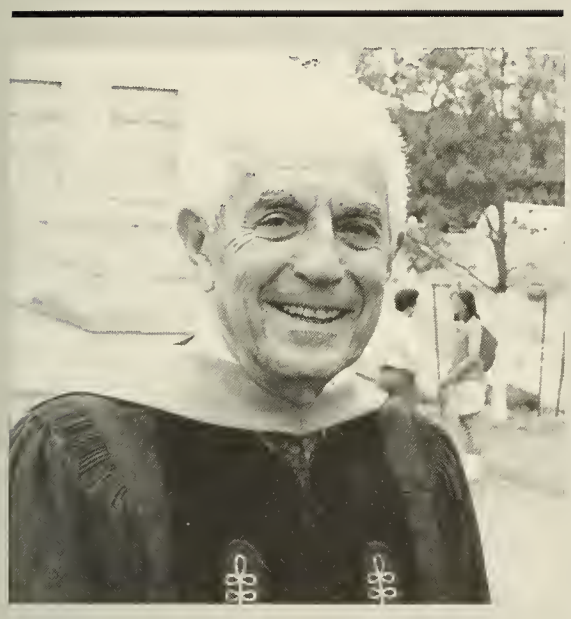
Course Director: Dr. Pelletier.
Offered: Year III.
Format: lectures, preclinical laboratory technique course, porcelain laboratory, clinic.
Evaluation: preclinical laboratory performance, clinical performance, written exams.

Removable Partial Denture Prosthodontics

The Removable Partial Dentures course is divided into two sections: the preclinical course and the clinical. In the preclinical course emphasis is placed on the technical procedures involved in the treatment of the partially edentulous patient. During this aspect of the course the student is expected to develop the didactic knowledge and technical skills of removable partial denture construction. An understanding of these basic concepts enables the student to develop the confidence for proper patient care. The student is taught the basic concepts of surveying and removable partial denture design and is constantly supervised individually by members of the department.

Course Director: Dr. Kiladjian.
Offered: Year III.
Format: preclinical laboratory, lectures, clinic.
Evaluation: clinical and laboratory performance, written examinations.

Administration and Members of the Faculty



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Dental Care Administration

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Associate Clinical Professor of Dental Care Administration

ANTCZAK, Alexia, D.M.D., M.P.H., D.Sc. Assistant Clinical Professor in Dental Care Administration

BERKEY, Catherine, M.A., D.Sc.
Assistant Professor of Dental Care Administration

BERNICK, Elizabeth B., D.M.D., M.P.H.
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BOSSE, Raymond, Ph.D.
Lecturer on Dental Care Administration

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Lecturer on Dental Care Administration

CALISTI, Louis J. P., D.D.S., M.P.H.
Lecturer on Dental Care Administration

COLCHAMIRO, Stephen, D.M.D.
Instructor of Dental Care Administration

COLES, Julius N., D.D.S., M.P.H.
Clinical Instructor in Dental Care Administration

DePAOLA, Paul F., D.D.S., M.S.D., M.S.Hyg.
Associate Clinical Professor of Dental Care Administration

DILLENBERG, Jack, D.D.S.
Clinical Instructor in Dental Care Administration

DIMAMBRO, Bernard, D.M.D
Instructor in Dental Care Administration

DOHERTY, Mark J., D.M.D.
Clinical Assistant in Dental Care Administration

DOUGLASS, Chester W., D.M.D., Ph.D.
Professor of Dental Care Administration
Department Head

FERGUSON, George, D.D.S.
Lecturer in Dental Care Administration

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Instructor in Dental Care Administration

GARVEY, Arthur J., Ph.D.
Assistant Professor of Dental Care Administration

GOLDSTEIN, Gary S., D.M.D., M.P.H.
Clinical Instructor in Dental Care Administration

GREEN, Warren F., D.M.D., M.S.
Clinical Assistant in Dental Care Administration

JETTE, Alan, Ph.D., M.P.H.
Lecturer in Dental Care Administration

JONES, Judith, D.D.S., M.P.H.
Assistant Professor of Dental Care Administration

JONG, Anthony, D.D.S., M.P.H., D.Sc.
Lecturer on Dental Care Administration

JOSHI, Anil, M.P.H., B.D.S.
Instructor in Dental Care Administration

LAWRENCE, Robin M., D.D.S., M.P.H.
Lecturer on Dental Care Administration

MARCUS, Philip, D.M.D.
Clinical Instructor in Dental Care Administration

MCKINLAY, John, Ph.D.
Lecturer on Dental Care Administration

POLLACK, Malvin M., D.M.D.
Lecturer on Dental Care Administration

POTTER, Dale E., D.D.S., M.P.H.
Instructor in Dental Care Administration

SILVERSIN, Jacob B., D.M.D., M.P.H., Dr.Ph.
Assistant Clinical Professor of Dental Care Administration

SOPARKAR, Pramod M., D.M.D.
Clinical Instructor in Dental Care Administration

TENNSTEDT, Sharon, M.S.N., Ph.D.
Lecturer on Dental Care Administration

Dentistry

HEIN, John, D.M.D., Ph.D.
Lecturer on Clinical Dentistry

ROSENBAUM, Robert S., D.M.D.
Instructor in Dentistry

Endodontics

CHERNIN, David A., D.M.D., M.L.S.
Clinical Instructor in Endodontics

DUNSKY, Joel L., D.D.S., B.S.
Assistant Clinical Professor of Endodontics
Department Head

GOLDSTEIN, Shepard S., D.M.D.
Lecturer on Endodontics

HAMBURG, Lyon W., D.D.S.
Clinical Instructor in Endodontics

KRAKOW, Alvin A., D.D.S.
Lecturer on Endodontics

REUBEN, Howard L., D.M.D.
Lecturer on Endodontics

RUBIN, Lawrence M., D.M.D.
Lecturer on Endodontics

TREANOR, Hugh F., D.M.D.
Lecturer on Endodontics

YU, Siu Min, D.D.M., M.M.Sc., D.M.D.
Clinical Instructor in Endodontics

WALTER, Patricia, D.M.D.
Clinical Instructor in Endodontics

Implant Dentistry Division

ALTOBELLI, David E., D.M.D., M.D.
Instructor in Oral and Maxillofacial Surgery

SHULMAN, Leonard B., D.M.D., M.Sc.
Lecturer on Oral and Maxillofacial Surgery
Division Head

WEBER, Hans-Peter, D.M.D.
Instructor in Periodontology

Operative Dentistry

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Instructor in Operative Dentistry

BORNSTEIN, William B., D.D.S.
Clinical Instructor in Operative Dentistry

BROWN, Richard S., D.M.D.
Clinical Assistant in Operative Dentistry

COHEN, Carl G., D.M.D.
Clinical Instructor in Operative Dentistry

DOGON, I. Leon, L.D.S., R.C.S., D.M.D.
Professor of Operative Dentistry
Department Head

DRAHEIM, Richard, D.D.S.
Assistant Professor of Operative Dentistry

FAGGIONI, Francis A., D.D.S.
Clinical Instructor in Operative Dentistry

FELDBAU, Elliot V., D.M.D.
Instructor in Operative Dentistry

FITZGERALD, William D., D.D.S.
Instructor in Operative Dentistry

GRAY, Richard M., D.D.S.
Instructor in Operative Dentistry

GRIFFIN, Joseph, D.M.D.
Clinical Assistant in Operative Dentistry

HORIUCHI, Minoru, D.D.S., D.M.D.
Lecturer in Operative Dentistry

KENNEDY, Betsy, D.M.D.
Clinical Assistant in Operative Dentistry

KURBAN, Andrew F., D.D.S.
Clinical Assistant in Operative Dentistry

LABAND, Peter M., D.M.D.
Clinical Instructor in Operative Dentistry

LAZAR, Steven, D.M.D.
Clinical Assistant in Operative Dentistry

LUND, William C., D.M.D.
Clinical Instructor in Operative Dentistry

NORRIS, Doris, D.D.S.
Instructor in Operative Dentistry

ROVER, Billy C., D.M.D.
Clinical Instructor in Operative Dentistry

RUBIN, Bruce, D.M.D.
Clinical Assistant in Operative Dentistry

SCIMONE, Francis S., D.M.D.
Clinical Instructor in Operative Dentistry

SHAFER, Mark R., D.M.D.
Clinical Assistant in Operative Dentistry

SIEGEL, Carl L., D.M.D.
Instructor in Operative Dentistry

SIKORA, Frank A., D.D.S.
Clinical Assistant in Operative Dentistry

TOGA, Carl J., D.M.D.
Assistant Clinical Professor of Operative Dentistry

TRUFANT, Lawrence A., D.M.D.
Instructor in Operative Dentistry

VANARIA, Roland E., D.D.S.
Clinical Instructor in Operative Dentistry

WHITWORTH, Leo, D.D.S.
Clinical Instructor in Operative Dentistry

YELLAND, Kenneth T., D.M.D.
Clinical Instructor in Operative Dentistry

Oral and Maxillofacial Surgery

AGRANAT, Barry, D.M.D.
Lecturer on Oral and Maxillofacial Surgery

ALTOBELLI, David, D.M.D., M.D.
Instructor in Oral and Maxillofacial Surgery

AUGUST, Meredith, D.M.D., M.D.
Instructor in Oral and Maxillofacial Surgery

COLIN, Wayne B., D.M.D., M.D.
Instructor in Oral and Maxillofacial Surgery

DONOFF, R. Bruce, D.M.D., M.D.
Professor of Oral and Maxillofacial Surgery,
Department Head

EVANS, Robert E., D.M.D.
Clinical Instructor in Oral and Maxillofacial Surgery

FERRARO, Nalton F., D.M.D., M.D.
Instructor in Oral and Maxillofacial Surgery

GURALNICK, Walter C., D.M.D.
Professor Emeritus of Oral and Maxillofacial Surgery

KEITH, David A., D.M.D.
Associate Professor of Oral and Maxillofacial Surgery

KELLY, John P., D.M.D., M.D.
Assistant Professor of Oral and Maxillofacial Surgery

KIMBALL, Peter G., D.M.D.
Clinical Instructor in Oral and Maxillofacial Surgery

LINCOLN, Robert C., D.M.D.
Clinical Instructor in Oral and Maxillofacial Surgery

LORENTE, Carol A., Ph.D., D.M.D.
Instructor in Oral and Maxillofacial Surgery

POZATEK, Zigmunt, D.M.D.
Lecturer on Oral and Maxillofacial Surgery

PROVENCHER, Robert F., D.D.S.
Clinical Instructor in Oral and Maxillofacial Surgery

ROSENBERG, Earle H., D.M.D.
Assistant Clinical Professor of Oral and Maxillofacial Surgery

SELDIN, Edward B., D.M.D., M.D.
Assistant Professor or Oral and Maxillofacial Surgery

SEXTON, John, D.M.D.
Instructor in Oral and Maxillofacial Surgery

SHULMAN, Leonard B., D.M.D.
Lecturer on Oral and Maxillofacial Surgery

STEMPIEN, J. Henry, D.M.D.
Assistant Clinical Professor of Oral and Maxillofacial Surgery

STEPHENS, Willie L., D.D.S.
Instructor in Oral and Maxillofacial Surgery

WILKES, Joseph W., III, D.M.D., M.D.

Oral Biology

BISWAS, Debajit K., D.Phil., D.Sc.
Associate Professor of Oral Biology and Pathophysiology

FLUCKINGER, Rudolph, Ph.D.
Assistant Professor of Oral Biology and Pathophysiology

GALLOP, Paul M., Ph.D., A.M.
Professor of Biological Chemistry
Department Head

GIBBONS, Ronald J., Ph.D
Clinical Professor of Oral Biology and Pathophysiology

GIDDON, Donald B., D.M.D., Ph.D.
Lecturer on Oral Biology and Pathophysiology

GOODSON, Jo Max, D.D.S., M.S., Ph.D.
Associate Clinical Professor of Oral Biology and Pathophysiology

HAMEED, Ahsan, F.C.P.S.
Visiting Instructor in Oral Biology and Pathophysiology

HAUSCHKA, Peter V., Ph.D.
Associate Professor of Oral Biology and Pathophysiology

HAY, Donald I.
Associate Clinical Professor of Oral Biology

KAPLAN, Michael L., D.V.M., S.M., S.D.
Assistant Professor of Oral Biology and Pathophysiology

LEE, Dosuk, Ph.D.
Assistant Professor of Oral Biology and Pathophysiology

MARGOLIS, Henry C., Ph.D.
Assistant Clinical Professor of Oral Biology and Pathophysiology

MORENO, Edgard C.
Associate Clinical Professor of Oral Biology and Pathophysiology

PAZ, Mercedes A., Ph.D.
Associate Professor of Oral Biology and Pathophysiology

RABADJIJA, Luka, M.D., D.Sc.
Principal Associate in Oral Biology and Pathophysiology

RAO, H.V. Sadananda, M.S.
Instructor in Oral Biology and Pathophysiology

SAKAMOTO, Masako, D.D.S., Ph.D.
Lecturer on Oral Biology and Pathophysiology

SAKAMOTO, Seizaburo, D.D.S., Ph.D.
Lecturer on Oral Biology and Pathophysiology

SMITH, Daniel, Ph.D.
Associate Clinical Professor of Oral Biology and Pathophysiology

SOCRANSKY, Sigmund S., D.D.S.
Associate Clinical Professor of Oral Biology and Pathophysiology

SUSI, Frank, D.M.D., Ph.D.
Lecturer on Oral Biology and Pathophysiology

TANNER, Anne C.R., Ph.D.
Assistant Clinical Professor in Oral Biology and Pathophysiology

TAUBMAN, Martin A., D.D.S., Ph.D.
Associate Clinical Professor of Oral Biology and Pathophysiology

VAN HOUTE, Johannes, D.D.S., D.M.D., Ph.D.
Associate Clinical Professor of Oral Biology and Pathophysiology

Oral Diagnosis and Oral Radiology

AHLIN, Jeffrey H., D.D.S.
Clinical Instructor in Oral Diagnosis and Oral Radiology

BECK, Joseph F., D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

BIDABADI, Nazila, D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

CUA-BENWARD, Gracia, D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

FOX, Christopher, D.M.D., S.M., D.M.Sc.
Instructor in Oral Diagnosis and Oral Radiology
Assistant Director of Clinics

FRIEDLAND, Bernard, B.Ch.D.
Lecturer on Oral Diagnosis and Oral Radiology

FRIEDMAN, Edward N., D.D.S.
Clinical Instructor in Oral Diagnosis and Oral Radiology

FRIM, Bernard J., D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

GARCIA, Raul, D.D.S., M.M.Sc.
Lecturer on Oral Diagnosis and Oral Radiology

GOLDMAN, Steven, D.D.S.
Clinical Instructor in Oral Diagnosis and Oral Radiology

HAGGERTY, Joseph M., D.M.D., J.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

HENRY, Joseph L., D.D.S., Ph.D., D.H.L., Sc.D.
Professor of Oral Diagnosis and Oral Radiology
Department Head

KAYE, Aaron E., D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

LINDNER, Rochelle H., D.M.D.
Lecturer in Oral Diagnosis and Oral Radiology

MAALOUF, Andrea, D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

MIGLUS, Halina, D.M.D., S.M.
Lecturer on Oral Diagnosis and Oral Radiology

MITCHELL, Robert S., D.D.S.
Clinical Instructor in Oral Diagnosis and Oral Radiology

PENNACCHIO, Evelyn A., D.M.D.
Clinical Assistant in Oral Diagnosis and Oral Radiology

RUNDLETT, Fred A., M.D.
Lecturer on Oral Diagnosis and Oral Radiology

SINGLETON, Ronald, D.M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology

TEHRANI, Abolghassem, D.M.D
Clinical Instructor in Oral Diagnosis and Oral Radiology

VALACHOVIC, Richard W., D.M.D., M.P.H., M.S.
Assistant Professor in Oral Diagnosis and Oral Radiology

WATKINS, Robert T., M.Sc., M.Ed.
Lecturer on Oral Diagnosis and Oral Radiology

Oral Medicine and Oral Pathology

AHMED, Razzaque A., M.D., D.M.Sc.
Assistant Professor of Oral Pathology

CATALDO, Edmund, D.D.S., M.S.
Lecturer on Oral Pathology

CHOU, Ming-Ying, B.D.S., Ph.D.
Lecturer on Oral Pathology

FRIM, Sumner P., D.M.D.
Clinical Instructor in Oral Medicine and Oral Pathology

GALLAGHER, George, D.M.D., D.M.Sc.
Associate Professor of Oral Pathology

GHAVAMZADEH Giti, D.M.D.
Associate in Oral Pathology

GIUNTA, John L., D.M.D., M.S.
Lecturer on Oral Pathology

GREEN, Joanne Cannata, D.D.S.
Instructor in Oral Medicine and Oral Pathology

HODOSH, Milton, D.M.D.
Lecturer on Oral Pathology

KABANI, Sadru, B.D.S., D.M.D., M.S.
Lecturer on Orla Pathology

KORNHAUSER, Andrija, Ph.D.
Lecturer on Oral Pathology

LOGIN, Gary, D.M.D., D.M.Sc.
Assistant Professor of Oral Pathology

MALOOF, Edward C., D.M.D., M.P.H.
Lecturer on Oral Pathology

MIGLIORINI, Steven A., D.M.D.
Instructor in Oral Medicine and Oral Pathology

MEYER, Irving, D.M.D., M.Sc., D.Sc.
Lecturer on Oral Pathology

MOHIMEN, Aloke, Ph.D.
Instructor in Oral Medicine and Oral Pathology

NIUKIAN, Khadjik, D.D.S., M.S., D.M.D.
Instructor in Oral Medicine and Oral Pathology

SANTIS, Helen R., D.M.D.
Lecturer on Oral Pathology

SCHWARTZ, Joel, D.M.D., D.M.Sc.
Associate Professor of Oral Pathology

SCHWARTZ, Stanley, D.M.D.
Lecturer on Oral Pathology (Forensic Odontology)

SHKLAR, Gerald, D.D.S., M.S.
Charles A. Brackett Professor of Oral Pathology
Department Head

SKOBE, Ziedonis, Ph.D.
Assistant Professor of Oral Pathology

SONIS, Stephen T., D.M.D., D.M.Sc.
Professor of Oral Medicine and Oral Pathology

STOUFI, Eleana, D.D.S., M.M.Sc., Dr.Dent.
Visiting Lecturer on Oral Pathology

SULLIVAN, John F., D.M.D.
Clinical Instructor in Oral Medicine and Oral Pathology

TILLMAN, Hilde, D.M.D.
Lecturer on Oral Pathology

WONG, David T., D.M.D., D.M.Sc.
Associate Professor of Oral Pathology

WOO Sook-Bin, D.M.D., M.S., M.M.Sc.
Instructor in Oral Medicine and Oral Pathology

Orthodontics

ANDELL, Melvin A., D.D.S.
Clinical Instructor in Orthodontics

COGNATA, Michael J., D.M.D., D.M.Sc.
Instructor in Orthodontics

COHEN, Melvin I., D.M.D.
Associate Clinical Professor of Orthodontics

DeANGELIS, Vincent, D.M.D.
Associate Clinical Professor of Orthodontics

DeFRANCO, David J., D.M.D., D.M.Sc.
Instructor in Orthodontics

DONAHUE, Robert M., D.M.D.
Clinical Instructor in Orthodontics

EVANS, Carla A., D.D.S., D.M.Sc.
Associate Professor of Orthodontics
Acting Department Head

HILZENRATH, Stephen S., D.M.D.
Clinical Instructor in Orthodontics

HIMMELHOCH, Deborah A.
Clinical Instructor in Orthodontics

MINER, R. Matthew, D.D.S.
Clinical Instructor in Orthodontics

MOIN, Kambiz, D.M.D., M.P.H.
Assistant Clinical Professor of Orthodontics

MORIN, Edward M., D.M.D.
Assistant Clinical Professor of Orthodontics

NELSON, Donald B., D.M.D.
Clinical Instructor in Orthodontics

PECK, Leena, D.M.D., M.S.D.
Lecturer on Orthodontics

PECK, Sheldon, D.D.S., M.Sc.D.
Lecturer on Orthodontics

SPECK, Morton, D.M.D.
Clinical Instructor in Orthodontics

TAYER, Barton H., D.M.D., M.Sc.D.
Assistant Clinical Professor of Orthodontics

WEST, Barbara R., D.M.D.
Clinical Instructor in Orthodontics

Pain Control Unit

FRASSICA, Joseph J., D.D.S., M.D.
Clinical Instructor in Oral Diagnosis and Oral Radiology
Director of Dental Anesthesia

Pediatric Dentistry

BRUUN, Richard A., D.D.S.
Clinical Instructor in Pediatric Dentistry

BUDDE, Norman T., D.M.D.
Assistant Clinical Professor of Pediatric Dentistry

DENBESTEN, Pamela K., D.D.S., M.S.
Clinical Instructor in Pediatric Dentistry

DOYKOS, John D., D.M.D.
Assistant Clinical Professor of Pediatric Dentistry

EDELSTEIN, Burton L., D.M.D.
Lecturer on Pediatric Dentistry

FRANK, Robert A., D.M.D.
Clinical Instructor in Pediatric Dentistry

GELLER, Peter B., D.D.S.
Clinical Instructor in Pediatric Dentistry

GOLDBERG, Norman L., D.M.D.
Clinical Instructor in Pediatric Dentistry

HERTZBERG, Jack, D.M.D.
Clinical Instructor in Pediatric Dentistry

JAROSZ, Joseph A., D.D.S.
Clinical Instructor in Pediatric Dentistry

KATES, George A., D.M.D.
Clinical Assistant in Pediatric Dentistry

MONAHAN, Debra F., D.D.S.
Clinical Instructor in Pediatric Dentistry

NEEDLEMAN, Howard L., D.M.D.
Associate Clinical Professor of Pediatric Dentistry
Department Co-Head

NELSON, Linda P., D.M.D.
Clinical Instructor in Pediatric Dentistry

SHUSTERMAN, Stephen, D.M.D.
Assistant Clinical Professor of Pediatric Dentistry
Department Co-Head

SONIS, Andrew L., D.M.D.
Assistant Clinical Professor of Pediatric Dentistry

SOPOROWSKI, Nancy Jo, D.M.D.
Clinical Instructor in Pediatric Dentistry

WENDELL, Jon J., D.D.S.
Clinical Instructor in Pediatric Dentistry

Periodontology

BADER, Herbert I., D.M.D.
Lecturer on Periodontology

BIEBUYCK, Jean-Marie, D.M.D.
Clinical Assistant in Periodontology

BYRNES, Thomas P., D.D.S., M.S.
Instructor in Periodontology

CIPRIANO, Robert, D.D.S.
Clinical Assistant in Periodontology

EPSTEIN, Henry D., D.D.S.
Associate Clinical Professor of Periodontology

FASCIANO, Robert, D.M.D.
Assistant Clinical Professor of Periodontology

FRIED, Ronald, D.M.D., M.M.Sc.
Assistant Clinical Professor of Periodontology

GLICK, Richard L., D.D.S.
Clinical Assistant in Periodontology

GOLDHABER, Paul, D.D.S.
Professor of Periodontology

GOLDIN, Marshall J., D.D.S.
Clinical Instructor in Periodontology

HOWELL, T. Howard, D.D.S.
Associate Professor of Periodontology

KALIS, Paul J., D.M.D.
Assistant Clinical Professor of Periodontology

KATZ, Edward, D.D.S.
Clinical Assistant in Periodontology

KRAWCZYK, Walter, D.D.S.
Assistant Clinical Professor of Periodontology

LEWANDO, Robert, D.D.S.
Clinical Assistant in Periodontology

LIBERT, Ellen M., D.M.D., M.M.Sc.
Instructor in Periodontology

LYNCH, Samuel E., D.M.D., D.M.Sc.
Instructor in Periodontology

MORRIS, Alan, D.M.D.
Clinical Assistant in Periodontology

NIEDERMAN, Richard, M.A., D.M.D.
Instructor in Periodontology

OBERNESSER, Mark S., M.S., D.D.S., M.M.Sc.
Instructor in Periodontology

ORR, Ronald B., D.D.S., M.P.H.
Clinical Assistant in Periodontology

PAYNE, Peter A., D.M.D.
Clinical Assistant in Periodontology

SALLOWAY, Elliot, D.M.D.
Clinical Instructor in Periodontology

STONE, Stephen, D.M.D., M.S.
Assistant Clinical Professor of Periodontology

SULLIVAN, Thomas M., D.D.S.
Assistant Professor of Periodontology

WILLIAMS, Ray C., D.M.D.
Associate Professor of Periodontology
Department Head

WITZENBERGER, Thomas, D.D.S., M.S.D.
Clinical Assistant in Periodontology

ZAGER, Noah, I., D.M.D., M.S.
Lecturer on Periodontology

Prosthetic Dentistry

BIRNBAUM, Herbert, D.M.D.
Clinical Instructor in Prosthetic Dentistry

BIRNBAUM, Nathan, D.D.S.
Clinical Instructor in Prosthetic Dentistry

BOND, William, D.D.S.
Instructor in Prosthetic Dentistry

CAMPBELL, Stephen, D.D.S., M.M.Sc.
Associate Professor of Prosthetic Dentistry

COFFIN, Samuel, D.M.D., M.B.A.
Instructor in Prosthetic Dentistry

EHRLICH, Harold, D.M.D.
Associate Clinical Professor of Prosthetic Dentistry

EHRLICH, Marc, D.M.D., M.M.Sc.
Clinical Instructor in Prosthetic Dentistry

FLANAGAN, David, D.M.D.
Clinical Assistant in Prosthetic Dentistry

GAVELIS, Jonas, D.M.D.
Assistant Clinical Professor of Prosthetic Dentistry

GETZ, Irwin, D.D.S.
Instructor in Prosthetic Dentistry

GHUGASIAN, Vartan, D.M.D.
Associate in Prosthetic Dentistry

GIORDANO, Russell, D.M.D.
Instructor in Prosthetic Dentistry

GOLDBERG, Peter, D.M.D.
Clinical Instructor in Prosthetic Dentistry

GRADY, Paul, D.M.D.
Instructor in Prosthetic Dentistry

GUARINO, Joseph, D.M.D.
Clinical Instructor in Prosthetic Dentistry

GUERRERA, Angelo, D.D.S.
Clinical Assistant in Prosthetic Dentistry

KAY, George, D.M.D., M.M.Sc.
Clinical Instructor in Prosthetic Dentistry

KAZIS, Albert, D.M.D., M.P.H.
Associate Professor of Prosthetic Dentistry
Department Head

KILADJIAN, Berdj, D.D.S., D.M.D.
Clinical Instructor in Prosthetic Dentistry

LAPIDUS, John, D.M.D.
Clinical Assistant in Prosthetic Dentistry

LEBLANC, Joseph, D.M.D., D.M.Sc.
Instructor in Prosthetic Dentistry

MORGANO, Steven, D.M.D.
Instructor in Prosthetic Dentistry

NAGER, James, D.M.D.
Clinical Assistant in Prosthetic Dentistry

NELSON, Clement, D.M.D.
Clinical Instructor in Prosthetic Dentistry

NELSON, Edward, D.M.D.
Clinical Instructor in Prosthetic Dentistry

NGUYEN, Lien, D.M.D., M.MSc.
Clinical Instructor in Prosthetic Dentistry

NISHIMURA, Ichiro, D.D.S., D.M.Sc.
Assistant Professor of Prosthetic Dentistry

PASTORFIDE, Fe, D.M.D.
Clinical Instructor in Prosthetic Dentistry

PELLETIER, Lionel, D.D.S., M.M.Sc.
Instructor in Prosthetic Dentistry

PHAN, Lawrence Luan Van, D.M.D.
Clinical Assistant in Prosthetic Dentistry

PICKER, Stanford, D.D.S.
Instructor in Prosthetic Dentistry

RAPHAEL, Jeff, D.D.S.
Instructor in Prosthetic Dentistry

RISSIN, Louis, D.M.D.
Assistant Professor of Prosthetic Dentistry

ROGOFF, Gary, D.D.S., M.S.
Clinical Instructor in Prosthetic Dentistry

ROSEN, Michel, D.D.S., M.Sc.D., D.Sc.
Clinical Instructor in Prosthetic Dentistry

SAMAHA, Jon, D.M.D., M.M.Sc.
Clinical Instructor in Prosthetic Dentistry

SASSON, J. Alan,
Clinical Assistant in Prosthetic Dentistry

SCHULTZ, Gerald, D.M.D.
Clinical Instructor in Prosthetic Dentistry

SIMONIAN, Joseph, Ph.D., D.M.D.
Clinical Assistant in Prosthetic Dentistry

SULLIVAN, T. Phillip, D.M.D.
Instructor in Prosthetic Dentistry

SWANSON, Arthur, D.D.S.
Instructor in Prosthetic Dentistry

TOLENTINO, Anthony, D.M.D.
Assistant Professor of Prosthetic Dentistry

WEENER, Harvey, D.D.S.
Clinical Assistant in Prosthetic Dentistry

WEISS, Robert Davis, D.D.S.
Instructor in Prosthetic Dentistry

WETREICH, Gary, D.D.S.
Clinical Instructor in Prosthetic Dentistry

WOOLFE, Richard, D.M.D.
Clinical Instructor in Prosthetic Dentistry

WYSHAK, George H., D.M.D., Ph.D.
Assistant Clinical Professor of Dental Auxiliary

ZOCCHI, Mario, D.D.S.
Instructor in Prosthetic Dentistry

HARVARD
School of Dental Medicine

188 Longwood Avenue
Boston, Massachusetts 02115
617 432 1443